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American Association for Study and Prevention of Infant Mortality

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GENERAL SESSIONS

ADDRESSES

PRESIDENTIAL ADDRESS*

TO THE

AMERICAN CHILD HYGIENE ASSOCIATION

ONE YEAR'S WORK—A CHALLENGE FOR NEXT YEAR

PHILIP VAN INGEN, M. D., New York City

It is my privilege to welcome the members of the American Child Hygiene Association and those others who are not members, but ought to be, to our Eleventh Annual Meeting. In opening this meeting, it is well for me to report to you some of the things that have been accomplished during the year as well as some of the things that we have been unable to do. In many of them, I think we can feel—not pride, for “pride goeth before a fall”—but encouragement. It has been the most active, most exacting year in our history.

It has interested me very much recently to read over the addresses which have been made by previous Presidents. In different ways and in different degrees, each has called attention to the increased work being done throughout the country and by ourselves. In each of them, there has been a note of disappointment at our lack of progress as an organization in accomplishing the work for which we exist. They have made suggestions for further increased activity on our part. We have listened to these addresses, have been much impressed, and have made up our minds that we must enlarge our work, but we have always been faced with the difficulty of raising funds.

Only once in our first ten years of existence have we had an income of \$10,000. In 1910, at the time of our first meeting, we had 503 members. In 1919, we had only 938.

A PROPHECY—AND FULFILLMENT?

Last year, in her presidential address, Doctor Baker said: “The time has come when it (our Association) must either go forward with rapid strides and meet the great opportunity and need that confronts it, or it will cease to be a force of any practical impor-

*Presented at the opening session.

tance in helping solve the great problem of our future generation." At the 1916 meeting, this situation was appreciated and plans were under way for a vigorous campaign, which in fact was started, but our entrance into the Great War put an end to it all. In spite of that, it was, however, our best year, with over 1,100 members and an income of over \$10,000.

That plan was not forgotten and Doctor Baker told us how we ought to begin with many additions and improvements to the original plan. She told us that we ought to have not less than 50,000 active members and that we would need \$50,000 for our first year's work. What have we done in carrying out this program? First of all, what about the sinews of war? Up to the end of our fiscal year, September 30, of that \$50,000 she bade us set out to get, we have taken in \$41,804. The American Red Cross, realizing the value of the work we are doing, in an effort to give us a start, granted us \$20,000, and another grant of \$10,000 was made by the Commonwealth Fund, on condition that we raise the remaining \$20,000 of our budget. They generously paid us, some weeks ago, \$7,500 of this grant, corresponding to the proportion of our share which we had raised. That means that outside of these two large contributions, we have raised \$14,304, approximately \$4,000 more than ever before and nearly \$5,000 more than we raised last year. We are still \$5,000 short of our goal.

A CAMPAIGN FOR MEMBERS

What of our membership? Our campaign was very much delayed in getting under way for many reasons, most of which were unavoidable. Dr. Howard Carpenter, as Chairman of the Membership Committee, has worked untiringly in organizing state committees for this purpose and we now have chairmen in nineteen States and the District of Columbia. Up to September 30, our membership had increased from 938 in 1919 to 1,698. That is very far short of the 50,000, although it is an advance. The American Public Health Association in one year increased their membership 160 per cent. We increased ours 81 per cent. The National Tuberculosis Association has today a membership of 4,066. Is there any reason why we should have only 1,698? Is our cause less worthy of support. less appealing?

You are all more or less familiar with the reorganization and great increase of our Executive Staff. We now have a General Director, an Assistant General Director and Executive Secretary, a Field Director, and a Director of Publicity. Their activities have been too numerous for me even to attempt to summarize. They are all presented to you in printed form. Our magazine is now appearing and we have received many flattering letters about it. Doctor Foote, Chairman of the Editorial Board, has given generously of his much occupied time, editorially and in the difficult work of organization. The Association owes much to Doctor Foote.

It would be unjust and ungrateful for me to leave that subject without a word of appreciation and gratitude to the entire staff for their unselfish devotion to their work. Without making any invidious comparisons, our especial thanks are due to Miss Knipp and her immediate assistants who, throughout the year, including the hot summer weather—and especially during that latter time—have handled an overwhelming and ever increasing mass of detail, which would have discouraged any less determined and less devoted group.

THE PARTING OF THE WAYS

What is to be our future as an Association? For the first time, really, we have come to the parting of the ways. Up till this year, there was but one way before us, our work being that which could be done almost entirely by correspondence and through our Annual Meetings. We may feel, in spite of what I said before, some pride in what we have done in this limited way. But now, we have had one year of experience in the other broader, bigger field, in which personal contact and field work play the important part. It is still possible, I suppose, to go back to our former program and, unless every member of this Association is willing to give more time, thought, and service to furthering the comprehensive plan for child welfare, we shall be obliged to curtail our activities. We have no reason to expect the same large special contributions that we received last year. It is up to us to provide funds. We have nearly 1,700 members, scattered through, I think, every State in the Union. We need the help and assistance of every one of them. Just think what it would mean, if each member made herself and himself personally responsible for obtaining ten new members!

That would mean 17,000 new members and an income of \$85,000. Does that seem extravagant? Do you think we do not need that much money to do our work? Mr. Homer Folks, as President of this Association, said to us in Philadelphia, "To do the work I have outlined, this Association would need only the trifling sum of, say, \$100,000 a year for the first few years. We might need more later." If we are to progress, if we are to accomplish what we all know ought to be accomplished in this country, we must have the personnel and the money to do it. This must be everybody's Association and everybody must be willing to do something—all they can.

CO-OPERATION THE KEYNOTE

We need more organized effort and co-operation among our members in their various States. It has often been suggested and discussed in the meetings of the Directors and of the Executive Committee whether we should not try to organize State branches. Independent State branches lead to confusion, to lack of harmony, in any nation-wide campaign. I hope that this coming year we will organize, everywhere, State Committees of the Association. These committees should have for their program, concentrated action in their own States for carrying out the program which Doctor Baker last year outlined in her ten points. There should never be any question of the justice of those ten points. They should have the services of our staff; financial assistance should be granted according to our means, and on approval of their plans by the Executive Committee, or by some special committee if such be deemed necessary. These committees should be organized by our local Directors and members and contain in their membership, representatives of all organizations doing child welfare work in their State, in order to bring about the co-operation without which failure is inevitable. What is of more importance, is that these committees should include a large number of the laity and a certain number of physicians. Without the interest and, therefore, the assistance of the laity, we can hope for very little.

THE NEED FOR INFORMATION

One of the great handicaps under which we work is our lack of knowledge of what is being done the country over. The Federal Children's Bureau, with their Quarterly News Letter to Directors

of Divisions of Child Hygiene, which is the result of the Round Table Conference held at our meeting in Asheville, and their Weekly News Summary, have made a big step in trying to make this information available. Through our magazine, we are trying to give this information to workers in all branches, and to the public who are interested—or ought to be. Such information is hard to get. We want the Affiliated Societies to keep us informed as to any matters of importance, whether it be new work, successes or difficulties.

That, however, will not be enough. This Association ought to have a corresponding secretary for each State in the Union, who would keep our Central Office informed of every bit of child welfare news that she could obtain. She ought to have county and city correspondents. The office in Baltimore writes thousands of letters, asking for information. Sometimes we get it, sometimes we do not. Without such sources of information, we shall always be ignorant of many things we ought to know. It keeps us from getting in touch with many activities, which can help us and which we can help.

The Nominating Committee this year has a very great responsibility. They will present names to the Association for election to the Board of Directors, and to the Directors for election as Officers, and to the Executive Committee. The success of our work depends upon our Directors and still more upon their Executive Committee. Doctor Hamill, in his address at Milwaukee, stated, concerning any organization, "It should be the prerequisite of every director or manager that he be sincerely interested in the problems of the organization and willing to give time, thought and service to the cause for which it is working." More or less permanence in the Executive Committee is essential. A change in policy and methods each year would be fatal. In previous years this Committee has met twice between annual meetings. This year it has held five full meetings and, in addition, a great many matters have been decided through correspondence. It must be evident that this Committee which is responsible for carrying out the policy of the Association must be available for frequent meetings. There is even greater need of such a committee this year than there was last, because there are matters of the very greatest importance to the

cess of our cause, which must be worked out at frequent meetings. The extent of our activity depends on our financial status. We must not get ahead of our income and we must decide from month to month how to proceed.

There are constantly coming before this Association requests from individuals and organizations for standards and programs of work, for advice as to what to do next. There should be a committee, or committees, permanent or for special purposes, representing the various branches of work in our field, which should be given authority to develop such programs and to prepare such standards and publish them in the name of the Association without waiting for our Annual Meeting to have them formally approved by the Directors. Our general principles of work are well established now and it is only in minor details where there can be much, if any, difference of opinion. We ought to be willing to reject any such program or such standards, prepared by our own committee, even though we may not all of us agree in every minute detail. It is results we are after.

One of the things that such a committee should take under consideration at once, is a definite plan and program for work for the child of preschool age. A paper is to be presented at one of our meetings on this subject, and the best thought and experience that we can assemble should be put to work in devising a definite program and standards.

A MOVEMENT FOR EFFICIENCY

One of the first things that our new Director did in assuming his duties was to make an investigation of the national organizations carrying on some phase of child welfare, and a digest of their programs has been prepared for future reference. Sixty-four national organizations are in some way, and in varying degrees, interested in the problem of child welfare. Sixty-four! The criticism that is made by business men, when appealed to for funds, and I speak from bitter experience, is that there is no end to these organizations, that there is a tremendous duplication of effort and cost, in spite of it all, we ourselves admit that there are gaps which need to be filled. As long ago as 1912, Doctor Wilbur, in his presidential address, said, "I believe that for the satisfactory determi-

nation of many of these questions, we should seek closer affiliation and union with all organizations devoted wholly or in part to work of a similar character." The Chairman of the Central Committee of the American Red Cross, in announcing the appropriation of \$20,000, stated that it was made with the understanding that every effort was to be made to bring about a closer co-operation among existing national organizations. There are two distinct forms of work to be done in our wide field of child welfare: First, the study and development of methods and standards of work and, second, propaganda work—spreading the gospel throughout the country. Our Association is committed to a program for the health of the child from conception through adolescence. I stand for that program. It is, in my opinion, nonsense for us to talk about a well-rounded program if we do not take in the whole period. But this does not mean that it is necessary for us to devote our energies to working out the standards and methods to meet the problems of all the various age groups, many of which are complex problems all by themselves. Mr. Folk's \$100,000 would be but a drop in the bucket. We should be willing and anxious to accept good methods proposed and tried by other organizations and preach them as part of the general program. It is only by a knowledge of the work of other organizations on our part and their knowledge of our work that we can pull together and save our energies. We are an army—an army of construction. The lessons learned in destructive warfare can well be applied to constructive warfare. For too many months and years we know how unsatisfactory and inconclusive were the results of brilliant individual efforts on the part of separate units in the War. We know that nothing was so essential as a complete knowledge of what each army, each nation, was planning and was doing. We also know that it was only when there was a unity of action by all that success came and came quickly. It is only by unity of action, complete co-operation, which must be based upon complete knowledge of each others plans, that our constructive warfare will end in success.

THE CO-ORDINATING COUNCIL

It was for this reason that the American Red Cross, through the Chairman of the Central Committee, at the request of several

PRESIDENT'S ADDRESS

sions, of whom I was one, called a conference of representatives of four organizations interested in child welfare work; our own organization, with a field covering from conception through adolescence—a field which we cannot at present thoroughly cover; the World Health Organization, confining its activities to the school child, and up to the present time limiting its work to only a part of the problems of that period; the Child Labor Committee, who are entering upon a broader field by interesting themselves in the problem of the health of the child entering industry; and the National Organization for Public Health Nursing, that branch of work so utterly essential in our campaign and which touches in various ways all age periods. At the first conference, it was suggested that it would be possible, by bringing together a limited number of organizations, whose combined programs would, or should, cover the entire field, to bring about a real method of co-operation by co-ordinating their activities—that it would also, in this way, be possible to eliminate much wasted effort and reduplication, if each organization would take advantage of the experience and work of the others. Several conferences were held and the Red Cross was asked to enter the conference on account of their many activities along child health lines. It was finally decided to form a Council for Co-ordinating Child Health Activities, whose main object will be:

“1. To define and develop so clearly their own work that each organization will be in harmony and co-operation with the others.

“2. To develop new methods which will lead to meeting more effectively some of the special problems still unsolved.

“3. To afford an opportunity for any organization dealing with the health of children to submit its plan and program for suggestions.”

This is not the first effort that has been made along these lines. For several years there has been a council composed of representatives of nearly all national organizations, but owing to its unwieldiness, practically nothing has resulted. It was for this reason that this Council has been started with so few organizations originally included. As soon as a definite plan is worked out others will be asked to join and

not the intention of those composing this Council to start a new organization with a large staff and ponderous budget. The object is more that it shall act as a sort of cabinet where the different organizations will discuss their plans together. The identity and independence of each will be maintained. There is no intention of urging a consolidation of all these organizations. Competition among individuals is one of the strongest motives for success. Competition among organizations in such an arrangement will mean that each will try to make its program better and more effective than the next organization's.

THE ULTIMATE RESPONSIBILITY

All that has been done so far along these lines has had the earnest consideration and approval of our Executive Committee. If the American Child Hygiene Association can play a big part in bringing about real co-operation and co-ordination among the many already existing agencies, it will not have lived in vain, if it has nothing else to its credit.

Members of the Association, the year ahead of us is big with possibilities—possibilities of success, possibilities of failure. The responsibility for the outcome, whether it shall be good or whether it shall be bad, lies upon each and every member of the Association. The question is, have you faith in our program? If you have faith, what are you willing to do? Faith without work is dead. The success of our work, with its almost boundless opportunities cannot alone be secured by the tireless, ceaseless efforts of our Executive Staff and a few of our members. It is up to us to decide the result. Will all of us, every one of us, pledge ourselves to help to the limit of our ability? If so, we will have crossed the Rubicon—we are on its banks now.

A PROGRAM FOR AMERICAN CHILDREN*

HERBERT HOOVER, Washington, D. C.

My mind is perhaps more filled with the problems of child life than most laymen's. During the past six years I have had the responsibility of directing the organization and administration in special support required by some two million infants and children in Belgium. Through four long years of war famine, since the Armistice, and again, we have ministered to a horde of six million children in Central and Eastern Europe, of whom three million still remain upon our hands. I have thus been brought close to the great tragedies of child life in a great laboratory of mass action.

With this background I wish to preface this discussion of child problems in my own country with what I believe must become a fundamental national principle. That is, the nation, as a whole has the obligation of such measures toward its children, as a whole as will yield to them an equal opportunity at their start in life. This responsibility and duty is not based alone upon human aspirations but it is also based on the necessity to secure physical, mental and moral health, economic and social progress by the nation. Every child delinquent in body, education or character, is a charge upon the community as a whole and a menace to the community itself. The children of strong physique, of sound education and character are the army with which we must march to progress.

Through the cumulation of efforts during this 150 years of our national life, efforts by a myriad of devoted voluntary agents, with generous state and national action, we have done more for our children than any other nation. Yet few of our communities today can point to all children as one hundred per cent sound in birth health, education and moral surroundings. Such perfection will probably never be attained, but most communities are lamentably behind the possibilities of this ideal. During the war, the problem that arose in connection with the mobilization of our great army and with the food supply of our country brought us a fine intro

* Presented at the General Session, October 11, 1920.

spection of our failures, and we must not lose our awakened sense of responsibility.

It is upon some phases of public relations to our deficiency below the ideal that I wish to speak today. Although you are devoted primarily to hygiene, I know that you will agree that all the problems of birth, health, food supply, education, labor and housing are so interwoven that they must march step by step.

If we were to take a broad survey of the children of our nation, we could say at once that probably sixty per cent of them are from the homes of high intelligence and education, that the high character of their parents, with facilities furnished by the State in our public school system, need give us but little anxiety as to this great majority. It is upon the reduction of the remaining forty per cent that our solicitude must concentrate itself. It appears to me that the operation of practical public interest revolves around two center points: First, for infant life prior to the school age, and second, for child life to the age of adolescence. The first case must center in our homes and the second case must center mostly in the schools.

The first problem, except for the phases of poverty, becomes largely one of education. The most practical step yet evolved has been the creation of the community nurse, with the stimulus thus given to community interest in the problems of child birth and infant care. I see no more reason why our local governments should not support a staff of community nurses than that they should support a staff of policemen. Certainly, such a staff will ultimately decrease the necessity for police.

There is another service which the organized community owes to infancy and childhood as well—that is the provision and protection of milk supplies. We need insistent recognition of the fact of the interdependence of the human animal upon his cattle. The white race cannot survive without its dairy products and no child can be developed on short or bad milk supplies. The knowledge of this phase of infant welfare is more backward amongst parents of town and city children than amongst country children, because without much special thought there is available to country children ample milk supplies. There does lie in the country, equally with that of most cities and towns, the fundamental question of pure milk. We have yet to develop public conscience up to the compul-

sory slaughter of all tubercular cattle. The investigations of the Food Administration during the war showed a woeful lack of appreciation of the need of milk for children generally in the poorer sections of the larger cities. Any study of the nutritional problem for children in the city quickly divides itself into malnutrition due to poverty and that due to ignorance on the part of parents. Fortunately, in the American cities the portion due to poverty is not large, but to the infants of this section there must be assured fundamental nutrition, out of protection to the community as a whole.

After children have arrived at school age, we have opportunity to correct malnutrition due to ignorance or misfortune by providing at least one meal a day in the schools of those sections that need it. This again has a warrant not in charity but in insurance to the whole community against the deficiencies in health and mind of our population in the years to come. I believe that the definite institution of supplementary child feeding in public schools in certain places is a necessary part of municipal endeavor. Coupled also with this, I am a firm believer in clinical examination and reports to parents as a definite part of school work.

That part of malnutrition due to ignorance on the part of parents would in time find ultimate solution if all our schools elaborated their curricula, on the hygiene side, up to standards set in a few localities, for at least we would catch up with the next generation. We indeed need more widely extended teaching of the fundamentals of nutrition in the public schools, not only as a part of the advance in public health but also in household economics.

Some may object that this extension of medical supervision by community nurses, clinical inspection of children in the schools, a supplemental meal in schools of certain sections, all tend to an extension of too intimate government. In the very creation of free schools and compulsory education itself we have accepted the fact that we cannot as a nation rely for the upbuilding of the race upon the initiative of the parents alone. No one can deny that the physical development of child life is of equal importance with education. We, every one of us, pay the price in our jails, in our poorhouses, in our hospitals, in the loss of our economic efficiency, the fertile ground that we furnish for all the social patent medicines.

for our failure to have grasped the entire problem of child development, not only intellectual but physical as well.

We have also some deficiencies in our school system itself. In this, some parts of our nation have made such wonderful advances and yet so much remains to be done! I am one of those who believe that education must be compulsory in the interest of the nation as a whole, and I believe that the period of compulsion should extend to fifteen or sixteen years of age. Two states, as yet, have no compulsion, and in some, compulsion is really ineffective, by short terms, shocking facilities, etc. The war has greatly disturbed the efficiency of our public schools, even in the best communities, for the payment of our teachers has not kept pace with the rise in economic levels. At one time we were short nearly 100,000 teachers. Furthermore, building operations have fallen behind the growth in the number of our school children and, in many cities, the children are woefully overcrowded. There has, during the last few months, been a great deal of attention given to these problems, and one can state with great satisfaction that progress is being made to correct these evils in many places.

There is also linked to this whole problem of education and welfare of children, the problem of child labor. The Federal Government has already recognized the unsoundness in the economic use of the nation's resources in permitting the entrance of young children into industry. Such a practice results in the progressive degeneration of the race, and tends to impair the human resources of the country on which the coming generation must rely. The matter cannot wisely be left to the sole initiative of the separate States, for we have proved with great bitterness that it is not only unfair to the States which have attempted to deal with the problem but it places a premium upon States which are willing to subordinate the future well being of their children to a present questionable competitive advantage in industry.

In considering the problems of child labor, a differentiation must be made between the various employments in which children enter. The entrance of children of tender years into mills, factories and mines, tends to stunt their development and to injure the race. The argument that the child is enabled to learn a trade is unsound for the trade may be more quickly learned, with greater oppor-

tunity for subsequent progress by a boy of better physical condition of sixteen years, who has spent ten years in elementary schools, than by a boy who loses the opportunity of intellectual and sound physical development by entering into such labor at ten or twelve. On the other hand, the intermittent employment of children in agriculture may, if wisely supervised, develop physique and form a fine supplement for the more formal education in the country schools.

Up to the present the Federal Government has not been able to deal comprehensively with the subject of child labor. The original Child Labor Law was declared unconstitutional. It appears to me absolutely critical that we should have such Constitutional amendment as permits the Federal Government to take direct action on this question, for so long as certain States are so backward in their social development that they will sacrifice their children to industrial advantage it is not only unfair to the other States but it is poisoning the springs of the nation at their source. And in the spread of this infected population throughout the whole area, every State, no matter how highly developed its social organization, must bear the burden of shiftless poverty, and criminality, that spreads from such areas.

Prohibition of child labor is at best only a negative attack on the problem. It is not thoroughly effective in promoting the economic and moral welfare of the nation, unless the time now spent by the child in industry is devoted to adequate schooling and to activity that will develop his physical well being. Nothing can be worse than compulsory idleness of children, and therefore the period of compulsory elementary education and the period of prohibition of child labor must be complementary. We must not only protect our children from the physical degeneration of child labor but we must enable them by education to take their place in society and give them that equality of opportunity at their first step in life that should mark the particular distinction of our democracy. Some States have prohibition of any child labor that is socially and physically objectionable. Many States still fail to dovetail compulsory school laws and child labor laws so as to protect children from unsuitable work and the nation from illiteracy. Illiteracy rises in some States as high as 20 per cent of the whole population over ten years of age. The ideal would be for each State to take separate

action to attain these uniform ends, but, as I despair of the social development of certain States, I have myself come to the conclusion that we must have direct or indirect Federal action in order to compel those who have so little sentiment in national interest that they would debauch our child life for the mere purpose of favor to certain industrial establishments.

I am one of those who hope much for these problems from the enfranchisement of women. The major part of progress to date has been due to the insistence of our women. But for the future political parties will need to advance these issues to the forefront if they would secure the adherence of the women. A demand from the women would find no hesitation in the alacrity of our political leaders.

If we could grapple with the whole child situation for one generation, our public health, our economic efficiency, the moral character, sanity, and stability of our people would advance three generations in one. These complex problems cannot be solved by any iron-clad system of governmental action. When all public interest has expended itself, child developments still rest with parents, and parents need much bringing up. Much can be done by the waking of public conscience in every community. Much still remains to be carried out by action from the State in its local as well as national phases. All these points of attack require the day to day, disinterested, voluntary devotion of such associations as yours.

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THE CONDUCT OF THE NURSERY IN AN OBSTETRICAL CLINIC

A. N. CREADICK, M.D., New Haven

It has been successfully maintained that adequate prenatal care and proper attention at the time of delivery will materially reduce infant mortality. To further this improvement there remains for study a brief period of nursery care covering the first few weeks of life coincident with the mother's convalescence. The care of the child was formerly conducted by the obstetrician who, later, by reason of the necessary association with infectious diseases, avoided treating older children and pediatrics became a well defined specialty. Invidious comments by those who regard the obstetrician as indifferent to the welfare of the infant are not justified.

Supervision of the newborn requires (1) attention to the physiologic adjustment to extra-uterine life, (2) the care of congenital defects and those acquired during delivery, (3) the treatment of diseases of the newborn and (4) the training of the mother in her role in the problem of infant nutrition. This supervision is successfully conducted by the obstetrician as is evidenced in a review of 500 consecutive cases so handled in the Woman's Clinic at Yale.

Progress or growth is a biochemical process with variations due to factors of quantity and quality of food, environment, nationality, sex, etc., and is best gauged at the moment by weight. However, uniformity of conditions at weighing-time is not always assured in the statistical reports hitherto published. The base line is the birth weight which in our cases is taken in grams after the initial oiling of the body to remove the vernix. Slight variations in this weight may result from differences in abdominal content such as exist in a child delivered by classical caesarean section and one delivered by frank breech, but in each instance no more reliable base can be taken for their relative growth. The records at present under analysis consist of consecutive deliveries in a clinic to which a large proportion of abnormal cases are referred, and therefore, a "normal" curve cannot be established from the "mean"

or average of such cases but better from the per cent incidence, which gives the normal picture as the usual one and still includes the pathological extremes. For instance, the average of this series of birth weights is 3,250 grams, while the highest percentage of incidence occurred over 3,300 grams. (Figure I.)

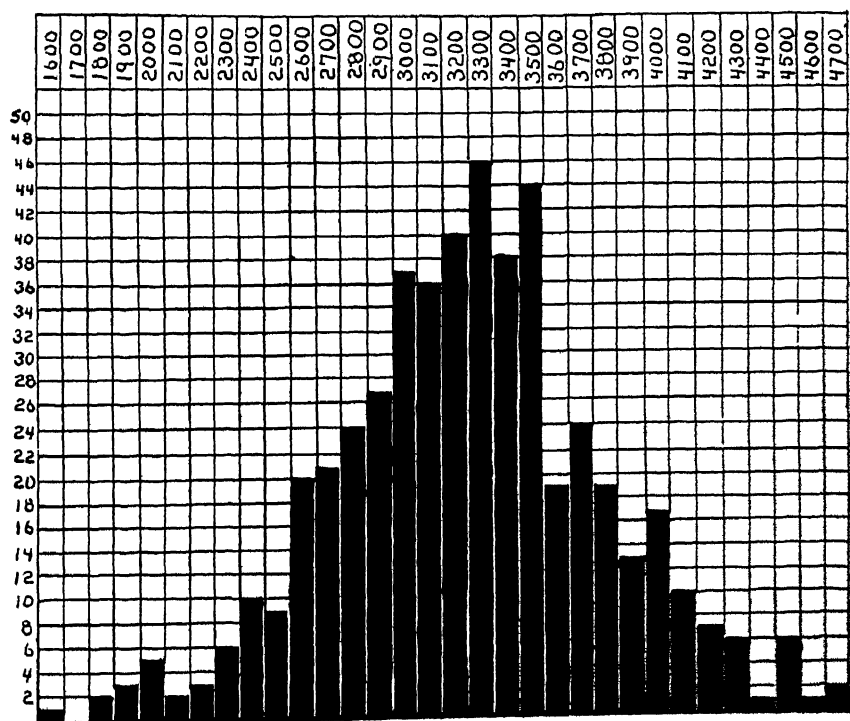


Figure I. Birth weights in grams of 500 consecutive deliveries.

The first deviation from the base line is an initial loss of weight which is best expressed as a percentage of birth weight. It is of less value when expressed as an average from a series of cases. Ramsay and Alley found 200 grams the average initial loss, in other words 6 per cent of the average birth weight of their cases. Obviously, the loss of 200 grams is 10 per cent of the birth weight of a 2,000 gram baby and is serious, while for a 4,000 gram baby it would mean but a 5 per cent loss, which is insignificant. In our series the average initial loss was 290 grams, while the usual loss was 260 or 8 per cent of birth weight. The greatest loss occurs

usually on the third day, although some of our cases began to gain after the first day and some who did not begin to gain until the fifth or sixth day regained birth weight before discharge. We are impressed with the apparent relation existing between the amount of initial loss and the rate of return to normal. In view of this there is a definite value to the 10 per cent level of initial loss as the lower limit of normal, and there is something wrong as well when the period of initial loss is protracted past the fourth day.

The initial loss of weight, first studied by Quetetlet from Chaussier in 1835, and concerning which there has been consider-

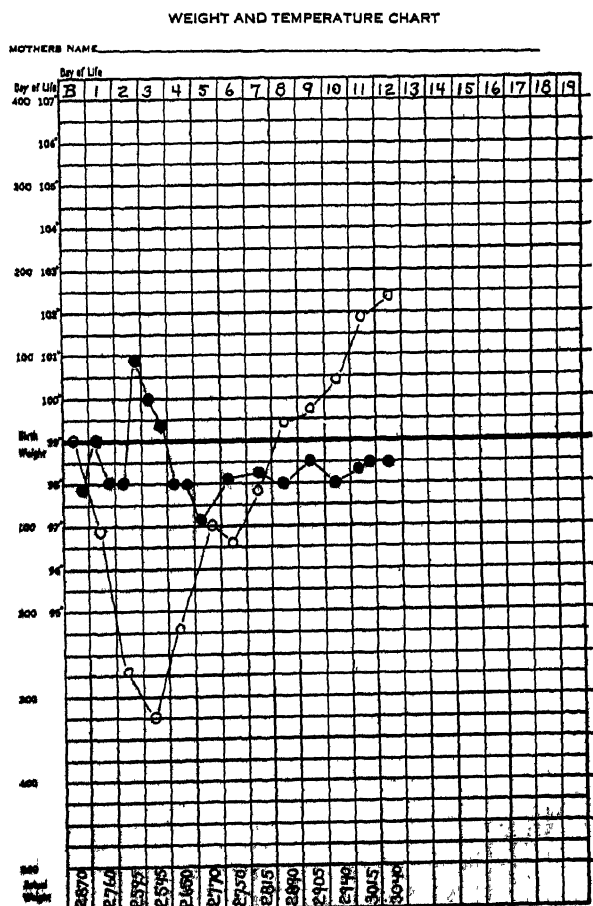


Figure II. Nursery chart showing relation of initial loss of weight to temperature rise.

able speculation, was carefully analyzed for the normal by Hammet who laid down the dictum that "the heavier the initial weight the greater the per cent drop." As to its etiology there have been mentioned "mechanical" as well as "metabolic" factors. The former consists of loss of urine, meconium and occasional vomiting of amniotic fluid; the metabolic factor consists of a rapid oxidation of the small amount of stored glycogen and burning of some of the fat which was stored in the last months of pregnancy.

Coincident with the initial loss a rise occurs in temperature which has been called "inanition" or "dehydration" fever. This rise formerly occurred in 80 per cent of our cases, but by the expedient of giving boiled water after each breast feeding this temperature appeared in less than 5 per cent of cases. Feeding of breast milk from another mother during the interval will reduce initial loss in weight and prevent this elevation of temperature. (Figure II., page 33.)

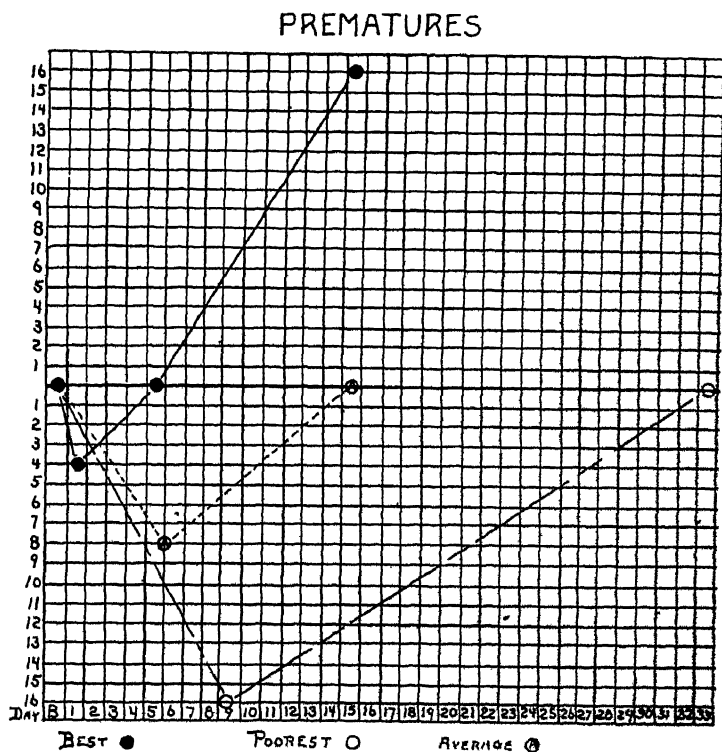


Figure III. Weight curve of premature infants.

After this initial loss normal infants regain birth weight between the seventh and tenth day. Four hundred and fifteen of our 500 babies progressed normally, while 70 others, by reason of maternal complications, birth injuries, infections, or other well-defined cause, failed to recover so rapidly; 66 either remaining in the hospital or followed up at home for a few days, and 4 not traced. One-fifth of these cases required supplementary feeding for a few days but five, or 1 per cent, had to be weaned. To elaborate the meaning of well-defined causes mention should be made of the prematures, of which there were 32; infants of excessive size, of which there were 50, and three marked instances of intra-partum, trans-amniotic infection. Prematures regained their birth weight more slowly than normal-sized infants and in our cases the average for the series was 15 days, the slowest case not regaining birth weight until the thirty-third day. (Figure III., page 34.)

The infants of excessive size conformed to Hammet's dictum, just alluded to, with so great an initial loss that their return to

INFANTS OF EXCESSIVE SIZE

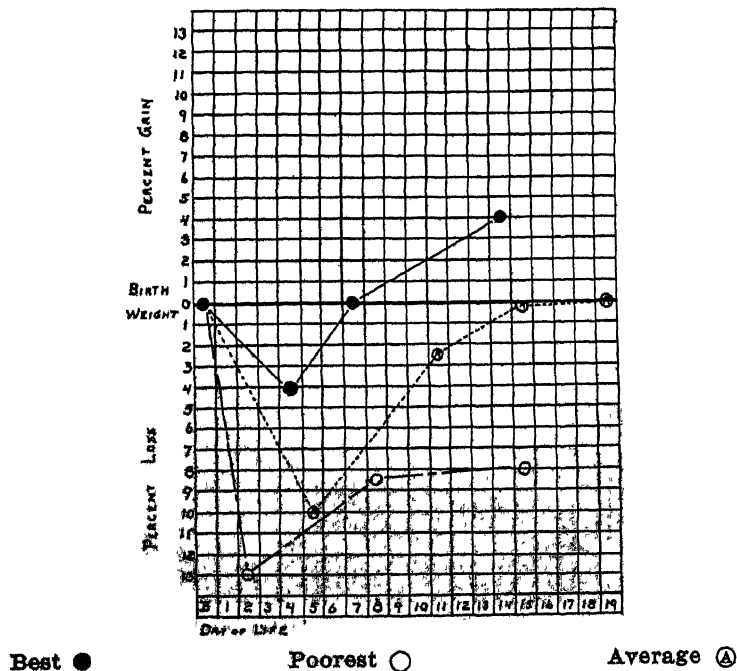


Figure IV. Weight curve of infants of excessive size.

normal, while regular, was protracted past the 14th day. (Fig. IV., page 35.) The demonstration of a blood stream infection in the newborn, with its avenue of entrance the amniotic surface of the placenta and the fetal vessels in the cord, opened a new field in obstetrical pathology. Instances studied show a high rate of infant morbidity and mortality.

There were ten deaths, eight of which were due to birth injuries or serious congenital abnormalities and occurred within the first few days. The two deaths remaining might possibly be attributed to postnatal care, but lacking autopsy findings, so much only can be said, namely that each was one of twins, each was under-developed, weighing 2,600 grams. In the one instance death occurred on the second day, up to which time the child had never cried vigorously; cyanosis and apnoea were pronounced terminal symptoms. In the other instance on the 22nd day one of twins born to an eclamptic mother died suddenly and unexpectedly without demonstrable physical signs. This child had never regained its initial loss in weight. Therefore, 85 per cent of our cases were

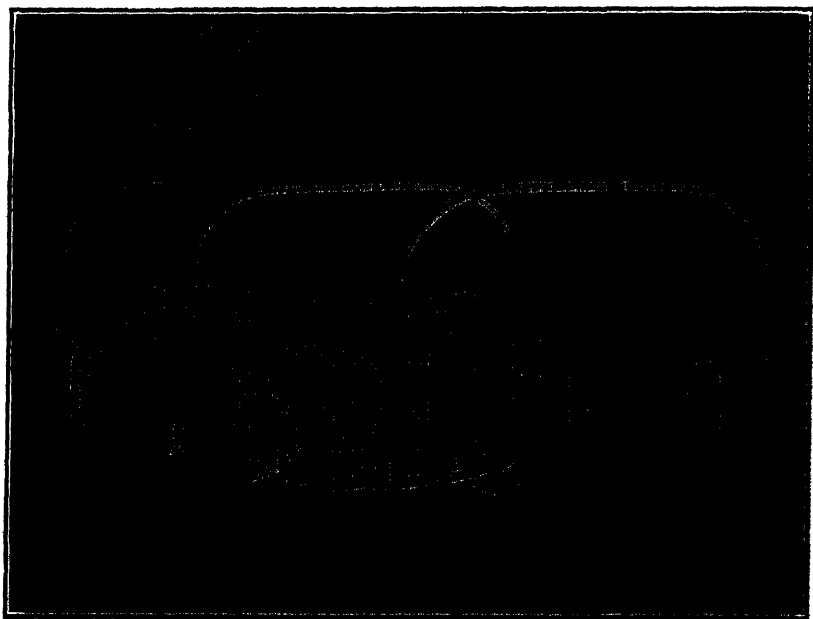


Figure V. Nursery basket for isolation and private use.

satisfactory, 12 per cent less satisfactory but explained as unavoidable and delayed in the light of our present knowledge and treatment, and $\frac{1}{2}$ of 1 per cent were failures.

While each case requires individual attention without didactic statements as to a "routine," nevertheless certain general principles can be maintained: First, babies have been handled too much; second, they are uniformly over-weighted with clothes; and third, their treatment and feedings are too rapidly and radically changed. The initial oiling and the cord dressing are done in the delivery room while waiting for the delivery of the placenta. Following this the baby is taken directly to the nursery. Weights and measurements are taken, prophylactic eye treatment given, shirt and light diaper put on and the baby put to bed and let alone. All our nursery beds consist of basket units which rest in frames; those of the private patients swing on rotating pivots, singly (Fig. V., page 36.); those of the ward patients are fixed on frames in groups of three and four (Fig. VI.). The single units are of advantage for purposes of isolation and are necessary where isolation technic is required, but could be improved by the addition of a metal check to prevent swinging.

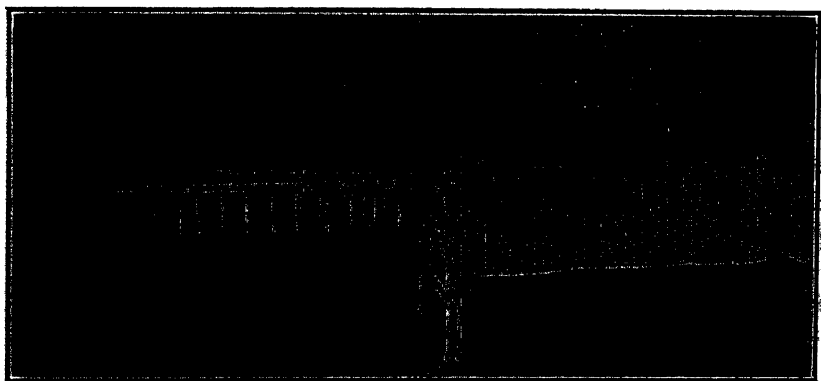


Figure VI. Less desirable basket and rack in use for ward patients.

During the first twelve hours after birth the infants are given warm boiled water at four hour intervals until both patients have recuperated from the effects of labor. Thereafter, at four hour intervals, day and night, the infant is put to the mother's breast and clothing changed if necessary. Boiled water from a bottle is

given between meals in the daytime if the child is awake. At the same hour every morning the infant is bathed with as little exposure and as little handling as is possible; the under-nourished are oiled, the thriving babies, through a concession to convention, are still bathed with warm, soapy water. The daily weights and temperatures are taken at the same time, and, as nearly as possible, under the same conditions in regard to hour of nursing and time of stool. Two complete general physical examinations are made, one at birth and one on discharge.

The most important external influence on the child is the quantity and quality of its food. This problem begins immediately the cord is cut and many factors are involved as regards both the mother and child, not infrequently the problems are incapable of solution without simultaneous study of both patients. As regards the mother, anatomical development of the breasts, the general health of the patient, prenatal preparation for nursing, the character of the delivery, the initial period of agalactia, the diet during the puerperium, the environment, and the training for proper nursing habits; and as regards the child, the general state of nutrition at birth, the character of labor, the initial period of agalactia, the extent and duration of the period of loss, and the requirements for normal metabolism, may summarize the more salient influences. It is agreed that mother's milk, being a homologous protein, is the best food for the infant. Profound puerperal sepsis, or advanced tuberculosis in the mother may contra-indicate breast feeding. By a proper study of the two patients we have been able to maintain maternal nursing in 99 per cent of our cases; in two of the five artificially fed, the death of the mother from influenza explained the substitution. Such a proportion of successful cases cannot be shown by the pediatricists, largely because they have not the same intimate control of the mother. Obstetricians have recognized that pediatricists are effective advocates for adequate prenatal care, but the proper conduct of such care certainly must rest on the obstetrician still or else the practitioners of pediatry will be doing obstetrics as well. For instance, inadequate glandular tissue in the breasts of an obese woman or inverted nipples may be diagnosed by any trained observer, but the extent of latent or active tuberculosis requiring wholly artificial feeding, the care of a patient with

eclamptic toxemia, or the period for breast nursing in puerperal sepsis are problems for the obstetrician. To mention additional evidence of the interrelation of the two patients from an obstetrical viewpoint the influence of suckling on the involution of the uterus might be cited. As an illustration of the influence the character of the delivery has on breast feeding, Benested, whose excellent monograph first covered the statistics of the new-born, called attention to the variation from the normal weight curve which occurred in infants whose mothers had lost 1,000 cc. or more of blood at the time of delivery. In the light of our present knowledge the expectant treatment of placenta previa and eclampsia involves more attention to the maternal condition and a greater resultant risk to the fetus. Eclampsia ought to be a preventable disease with no spontaneous occurrence in those cases that have had adequate prenatal care, but in both of these conditions we deal with premature babies as well as those subjected to greater risk of infection and operative delivery. Naturally these infants are harder to save. In both of these conditions and in their treatment there is a definite influence on the establishment and quality of mother's milk.

Hoobler made a careful analysis of the requirements of the diet of the nursing mother and demonstrated that a deficient diet had an injurious effect and that overfeeding was not helpful, secondly that the ratio of 1:6 digestible protein to digestible fat and carbohydrate is most successful. Our ward diet for nursing mothers is superior to the diet during the war, but is still below the 2,800 to 3,000 calories deemed most advisable by Hoobler. It is reinforced by cocoa and milk or egg-nogs, with meals, between meals and at the last evening nursing. While many women are susceptible to minor variations in the milk supply with certain types of food, suckling is the best galactagogue. Indifference on the part of the mother, worry, preconceived doubt, or past failure are the worst enemies to adequate nutrition of the infant. First and most important in the maneuvers to defeat these enemies is the constant and patient watchfulness of a nurse, guaranteeing a comfortable posture to the mother and keeping the baby roused during the twenty-minute period at the breast. Next in importance may be classed the proper manipulation of the breasts by the nurse as

advocated by Sedgwick, which is not a manipulation of the glandular structure but a milking of the ducts. However, mention must be made here that the so-called primary engorgement of the breasts is a hyperemia and not a filling of the ducts, and is relieved by ice bags between nursings, while manipulations at this time are undesirable.

In order to estimate the amount of food the infant is receiving it should be weighed before and after nursing. It requires little handling to weigh the baby before it is taken to the mother and again on its return to the nursery with the clothing and diaper unchanged. The first deviation from the normal curve is an indication for this weighing, because it is not possible to complement the breast feeding until the quantity already obtained is known. The next measure is to add sufficient breast milk pumped from the child's mother or another woman to guarantee 75 to 100 cc. at a nursing, depending on the size of the infant. Failing a good supply of breast milk this supplement may be made from an appropriate formula.

Talbot, in his studies on the basal metabolism of the newborn, mentions the caloric value of colostrum, the "mechanical" and "physiological" initial loss in weight before alluded to in this paper, and develops a formula for heat dissipation as:

Total calories=Length X 12.65 X body surface, where the body surface is computed by Lissauer's formula $=10.3 \sqrt{\text{wt.}}$. His conclusions are that, (1) 62 calories per kilogram of body weight per 24 hours is the minimum requirement of the newborn, (2) that since chilling from exposure and bathing depresses the metabolism it should be avoided, and (3) that emaciated and premature infants should early be fed breast milk, failing which, a 5 per cent lactose or glucose solution is recommended. Bearing these findings in mind a failure to gain at a normal rate requires, first, attention to the character of the nursing, the nursing period, the mother's diet, the mother's physical condition; second, a weighing before and after nursing to determine the amount of mother's milk obtained; thirdly, to complement with breast milk or modified cow's milk that quantity until the total equals 90 grams per feeding. Mention is made of such details in furtherance of my premise that the care of the newborn is so complex that the solution cannot be

reached without considering the problem of the mother and of the child as interdependent, until we express milk mechanically from a herd of mothers and transfer it to the pediatricist to distribute as he sees fit to such infants as may survive.

Advocates of the dual control of the obstetrical nursery err in claiming an individuality in the biochemistry of the infant during the first few days of life. I have emphasized the fact that the progress of the new patient is dependent on the recent host. Conversely, the condition of the mother is radically influenced by a nursing child. I believe that the obstetrician and the gynecologist should be one and have no desire to widen their field to include pediatry. Some obstetricians who have tried the dual control have found the pediatricist regulating the cathartics given the mother, conducting prenatal care with regard to the securing of his future patient and not with regard to obstetric welfare, so that under this method the net result will be a return to the ancient anomalous union of obstetrician and pediatricist. The proper conduct of the nursery in a woman's clinic I believe should be under the obstetrician, but the pediatricist should be invited and expected as a consultant and collaborator, for his observations at this time form a basis for comparison in the future growth of his patient. The success of this procedure depends upon the personalities involved as is true of so many instances of human intercourse. However, it has proven successful in individual instances, and will produce the most reliable scientific work in this field.

DISCUSSION

Dr. William Palmer Lucas, San Francisco: I want to congratulate Dr. Creadick on the joint and successful obstetrical and pediatric care which their service has produced. I do not think there is any question in anyone's mind that there should be a dual responsibility. The problem of the newborn after the tenth day is naturally a pediatric one. It has been more or less as Dr. Creadick has pointed out. Very few—and on that point I want to congratulate the New Haven department—very few departments of obstetrics and gynecology have taken the trouble to study the first ten days of child life. I think this is the first one from an obstetrical and gynecological department that has taken into account to any extent the size and weight of the children, and their fat and caloric needs, and that has considered the question from the standpoint of the physiological and metabolic development. In the last few years at the University of California we have had the

dual responsibility. All newborn children, as soon as they are born, are turned over to the department of pediatrics and needless to say, there is a very close connection between it and the department of obstetrics. There is no possibility of the pediatrician suggesting the treatment for the mother; the obstetrician determines whether the baby should go to the breast or not. That is not a pediatric problem but it is the pediatrician's problem to determine what the baby shall get if it does not go to the breast.

There is another phase of the question which has interested me so far as our students are concerned, and that is the teaching of pediatrics beginning with the newborn. This plan is followed in some medical schools in other places, and I feel that it is a most important correlation and that the student gets a more intimate knowledge of the necessity of breast feeding and of the results of breast feeding if he has a demonstration within the first few days. There is a marked difference when the students and the nurses have the teaching from the nursery; those who get this early contact have a much broader idea of the subject from the pediatric standpoint. Similar results to those Dr. Creadick has shown could be shown by all departments if they had had the same opportunities from the start. They are the result of modern teaching and are the same whether the responsibility is in the hands of an intelligent obstetrician or in those of an intelligent pediatrician. The thing the pediatricians feel is that there are so few Dr. Creadicks and that we want more of them. We feel that the care of the mother and the care of the child should be provided for on a co-operative plan. The care of the baby after it is born and watching its general development should be left to the pediatrician. As Dr. Creadick says, you have no objection to the pediatrician coming in and taking charge of the child after the tenth day.

I think we could almost parallel the statistics Dr. Creadick gives; in 1,000 cases 1 per cent went out on supplementary feeding; practically 80 per cent went out on nothing but breast feeding. The possibility of the nurses and the students getting a broader viewpoint is very much better if the pediatric department has a co-operative part rather than a purely consulting part.

Dr. W. McKim Marriott, St. Louis: Dr. Creadick has given an excellent picture of the old fashioned family physician who looked after the whole family. However useful such a man may be in a rural community, he is hardly in place in a modern hospital. Obstetrics is essentially a surgical specialty, and when a surgeon attempts to care for the young growing infant he is certainly departing from his normal field of activity. The obstetrician may, if he has sufficient time and interest to study the subject, gain a working knowledge of pediatrics. He may also become an otologist or an ophthalmologist, but is it the wise thing for him to do so? Would he not be more efficient if he confined his efforts to his special field? Dr. Creadick has presented charts showing that infants taken care of on an obstetrical service may do extremely well but it must be remembered that the overwhelming majority of newly born infants are relatively "fool proof." The

average infant is born healthy and, if breast fed, no matter what else is done is likely to survive the first ten days of life. That is about the time when the obstetrician gives the infant over to the pediatricist. The charts such as Dr. Creadick has presented showing how well infants may do on an obstetrical service present the argument in the same way that an association of midwives might in arguing that the obstetrician is unnecessary inasmuch as the great majority of normal labors terminate well no matter who officiates at the confinement.

It is the abnormal infant that requires the care of the pediatricist but will the obstetrician always recognize the abnormal? Is he prepared to make the exhaustive examination necessary to reveal congenital anomalies? Recent statistics have shown that cerebral birth hemorrhage is very common, much more common than has been realized in obstetrical clinics. Is the busy obstetrician going to detect the signs of a slight birth hemorrhage? If on account of complications, the mother remains in the maternity hospital for longer than the customary period, and the infant shows signs of failing nutrition and begins to vomit, is the obstetrician going to have time to consider carefully the reasons for the child's failure to gain or to make the differential diagnosis between pyloric stenosis and other causes of vomiting? Then there is the differentiation to be made between the physiological jaundice of the newly born infant and the jaundice due to congenital malformation of the biliary passages. There is the infant who passes dark, tarry stools and requires immediate attention and radical treatment if life is to be saved. Many of the less important conditions of infancy are also likely to escape the eye of the specialist who is caring primarily for the mother and cares for the child only as a side issue. Failure to recognize certain conditions in the earlier stages may result in permanent damage to the infant. It is asking too much of the surgeon to keep abreast of the modern advances in pediatrics and to be able to treat intelligently all conditions of a newly born infant as they arise.

The point brought out by Dr. Lucas is a good one. It is important that our medical students should be taught the care of infants from birth and this teaching may be best done if given in a single department. In some schools where there is obstetrical control of the infant during the first ten days of life students are taught in the obstetrical department that the infant should be fed every two hours and should be drugged with castor oil. They then go to the pediatric department and are taught that infants should be fed every four hours and should have cathartics only under exceptional circumstances. The student is led to the false conclusion that during the first ten days of life the infant is quite different from what he is later.

In conclusion I might say the proposal that the surgical specialist should care for the nutritional problems of the infant makes me feel as I did when leaving a house after seeing a sick child, when I was asked if I would not take a look at the kitten as it was not very well.

Dr. J. P. Sedgwick, Minneapolis: I think some of you know that this is a pet subject of mine. We have had in our school, since the reorganization six or seven years ago, an arrangement whereby all newborn children go into the pediatrician's hands as soon as we cut the cord—that is the dividing point. (Laughter.) Dr. Litzenberg, our obstetrician, has done everything possible to co-operate with us. He thought at first that we were mistaken, but after we tried it out he became very enthusiastic and I know he is now. Dr. Litzenberg and I a few years ago were at the Association of American Teachers of the Diseases of Children and my address was on "The Pediatric Control of the Newborn Baby." Dr. Litzenberg not only feels friendly toward this thing, but he took part in the discussion on this subject urging that we save the baby. Then we passed a resolution urging that this plan be followed. This is very good if we have obstetricians who are sympathetic with it. Dr. Litzenberg tells me that it interferes with his work to waste his time upon the baby; that he has enough to do in obstetrics and that the baby is better taken care of in this way. The effect upon the baby is unquestionable. The newborn baby is a by-product in obstetrics. The function of many obstetricians is to separate the baby from the mother and the baby is frankly a by-product. In his later work outside, the student will call upon his pediatric friend for consultation. What does the ordinary pediatricist know about the newborn baby? He has learned what he knows from consultations. Now we teach them something. We have a graduate school in which we try to teach them the work upon the newborn child.

If we come next to the question of results, we find, without including *icterus neonatorum*, 75 per cent of pathology in the newborn. Dr. Taylor reported that in 1,000 cases that left the University of Minnesota Hospital where both mother and baby lived, in 1,000 cases the baby was at the breast. There are 1,000 new on record and there is research work on those babies. If you will look over the report of the work at the University of Minnesota you will find that a large portion of our study work is on the newborn child. We have worked intensively upon it and, as one of the men told me, we had an open field. Why? Because in most of the obstetrical departments the newborn baby is a by-product. Dr. Slemons did a very beautiful piece of work in uric acid in the blood but did not go beyond the placenta. He stopped at that point. It is true that we studied all these babies and every time we turn around we find that nobody knows what is normal—not even what is normal. Therefore, I appeal for the pediatric control for the newborn baby.

We have been talking about the newborn baby in private work. Dr. Litzenberg always turns his newborn babies in private work over to the pediatricist. What is more, we have three private hospitals where the newborn baby is turned over at once to the pediatricist, just as is done in the University work. Why? Because they have found that it is better for the baby and better for the obstetrician and the pediatrician.

Dr. Creadick (closing the discussion): I think Dr. Tallant and I got what we were looking for, namely, an active discussion. If we did not have so many pediatric friends we might continue the argument the rest of the evening. I am sure this paper will result in much future progress and that with the aid of good pediatricians we can study the metabolism of the newborn. One says there is 75 per cent pathology, the other that "the overwhelming majority of newly born are fool-proof"; obviously they do not agree among themselves nor know all that there is to know about the newborn. It seems obvious to me that if we can secure breast feeding we can secure the best success; the most important factor is the interdependent relation of the parent and the infant and I think that is secured by being under one head. I think since most obstetricians have the co-operation of the mother they are the most likely to be able to encourage her struggle with the breast feeding. It is true that at the Minnesota University they have done the largest amount of work in establishing a normal basis upon which all pediatrics in the future will rest. I have no objection to having these studies continued either by pediatricians or obstetricians—so long as we get scientists I do not care.

The timeliness of this discussion is apparent, for the teachers of obstetrics and of pediatrics must settle the problem in the interests of the medical student to guarantee the adequate care of the newborn by the private practitioner whether in general practice or in either specialty.

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EXPECTANT MOTHERS IN RURAL REGIONS

LOTTIE G. BIGLER, M. D., Armour, South Dakota

A physician from the city beginning practice in a village and country neighborhood, encounters many problems and difficulties. Many times, I have been discouraged and felt helpless, as there is absolutely no co-operation among physicians in rural communities.

The average rural home is very inadequate for its large family. There is improper sewage disposal, poor water, probably contaminated by sewage.

I know a family with fifteen children, living in a two-room house. All of these children were born in this house and the only care this mother ever had was what her husband and older children gave her. They were so isolated that even the neighborhood midwife did not get there. During the mother's last pregnancy, as she did not feel as well as usual, she consulted me. I found albuminuria present. I warned her and tried to instruct her. I thought, probably, I had made no impression on her, but she became so worried about herself that she sent her husband to engage me for her confinement. He was rather disgruntled over this new fangled notion of "wanting a doctor." His mother had never had one and she had had fourteen children. His wife was a strong woman, did all of her own work and even helped him in the field. But he was good to his wife and would not be stingy with her and would give her her own way this time. The baby arrived in due time, but I wasn't called. When I questioned them as to why, the husband said it was just too far to call a doctor out and the roads were bad and besides, they didn't need any help.

With each succeeding pregnancy, these women work harder, for there is one more to care for, and possibly more hired men to cook for, with no provision for hired help in the house. The usual diet, consisting largely of pork and potatoes, is not what a pregnant woman needs. The butter, cream, and eggs are sold to buy more quarter-sections of land. Among the farmers in the rural districts with which I am acquainted there is no lack of funds. What these

people need is to be taught the necessity of using some of their funds for the care of the mothers of this and of the next generation.

According to statistics taken from the rural communities of six different States, eighty per cent of the pregnant women have received no advice or instruction during pregnancy. This percentage is even higher in some localities. At least half of the women do not engage a doctor before the last month. Many of those who do so, communicate with the doctor either over the telephone, or by letter. I do not think that the laity are entirely to blame, for many women have told me that when they had asked their doctors if a urinalysis ought not to be made, the doctor said it wasn't necessary. We general practitioners need to be stirred up, for I believe we are all lax in this matter. If we would seize every opportunity, a great deal might be done towards educating our patients.

A case of mine illustrates the ignorance of some of these people. I was called out in the country fourteen miles, over almost impassable roads, to see a foreign woman. The husband had driven several miles to telephone as they had no telephone themselves. He reported that she wasn't very sick—that she had only a little rheumatism in her back. I found her all alone in a two-roomed shack, all but one of the windows boarded up to keep out the winter cold, and incidentally all the fresh air. Two fires were going full blast and the temperature of the room was at least 90 degrees. The woman was lying on the bed. I immediately recognized nephritis with threatened eclampsia. Before I left, the husband returned and I explained his wife's serious condition. He seemed very much surprised to think that this had to happen to his wife, and he liked even less the expense of having a nurse and a housekeeper.

To digress a little, I must tell my suffrage story which illustrates the crass ignorance of some of these people. I was talking to this same man on election day when the Dry, and the Suffrage Amendments were voted upon. I asked him how he voted and he answered:

"I vote 'no saloon,' I no can read so I say to a man there, 'Where I vote "no saloon,"?' He say to me, 'You no want to vote "no saloon"; it makes taxes higher.' I say to him, 'yes I do,' so he show me where to make the cross after 'NO,' so I vote 'no saloon'."

He had in reality voted against the dry amendment. I then asked him how he voted on the suffrage amendment. He said:

"I don't know what you mean by that. I vote 'no saloon' that make woman sufferin'."

I explained to him that Women Suffrage meant to give the women the vote and he then said:

"Ach! the womans don't need to vote, they can stay at home. I vote for my woman."

CARE GIVEN PEDIGREED STOCK

Isolated families, some of which are seventy miles from a doctor, are the ones who present the greatest problems. Many of them depend on ignorant midwives for their care and instruction. Many women die before a doctor can get to them. Many of these farmers are foreigners. They need help badly and are the hardest to reach for they look with suspicion on any innovations. The mothers often work in the fields up to the last minute performing most arduous tasks. It seems to me that the expectant mother in the barnyard gets far more attention and better care than the one in the house. If the barnyard-mother gets sick the whole household is upset, especially if she be a pedigreed animal. The farmer sends for the best veterinarian, possibly miles away. The State provides free courses of instruction as to how to keep the animals healthy and how to produce the strongest offspring. A man came to engage me to attend his wife who was near term. He said she hadn't been well the whole nine months. I asked him why he hadn't consulted a doctor about her. He said he didn't think there was any need, he supposed they had to feel badly the nine months—she always had during her other pregnancies. In the course of the conversation, he asked me how much I charged. I told him my fee. He said that was ten dollars more than he had paid three years before. I informed him that all fees had been raised. He said he believed he could get it done at the same price he had paid before. He said:

"I would like to have you—you have been recommended so highly, but you can't blame me for saving ten dollars if I can."

I said "No, I can't blame you if you have no choice as to which doctor you call; perhaps it will be all the same to you to get the cheapest."

He said that if he couldn't get it done cheaper, he would be back and engage me. I heard afterwards that he had dickered with an old retired doctor and had finally got him to come for the fee he had paid three years before. I felt like suggesting to him that he advertise for bids, regardless of qualifications. This man owns a half-section of land worth about a hundred and fifty dollars an acre, and his crop this year is worth about six thousand dollars.

Another example—a man came in to engage me for his wife's confinement. When I questioned him, I found out his wife was not at all well. I suspected nephritis and advised him to bring her in for an examination, or at least, to have a urinalysis made. I never heard from them until about the end of term and then I got an urgent call. I found her in convulsions and delivered the baby. The mother died soon after delivery, and it was with difficulty the baby was saved. The husband couldn't be made to see how "these new ideas" might have prevented the mother's death. He thought it was the doctor's modern method of profiteering. He also remarked he was sorry to lose his wife, as she was a good cook, and could milk more cows than he could.

I wish the mothers could be instructed on making layettes. Many times the infant arrives with very little, if any, provision made for clothing. The mothers argue that if the baby lives, they can get things at the store. So many seem to expect the babies to die at birth, or to be still-born. The percentage of deaths is high and I think this is due largely to the fact that they expect it to be so, and do not do the things necessary to prevent infant mortality. Those who do provide a sufficient quantity of clothing, do not use the proper materials. I have seen one outfit after another without a thread of wool in any of the garments. Wool is very necessary in a layette.

No small part of the problems in rural communities, is that of the unmarried expectant mother. Sometimes it seems that illegitimacy is on the increase. During my first six months in the community where I am practicing, eight girls came to me pregnant from two to eight months. I suppose more come to me than to the other physicians because women in the profession are scarce in this State. They probably think a woman will be more apt to help them out of their difficulty. I have succeeded in talking many of these

girls into choosing the honorable path. If only more could be reached, many tragedies might be averted.

SOLVING THE RURAL PROBLEM

No doubt, these problems of expectant mothers in rural communities have to be approached in different ways, in different communities. The crying need is for nurses trained for rural work. The average nurse, born and raised in the city, is unable to adapt herself to rural conditions. One nurse for a county is insufficient. There should be enough nurses so that all homes could be visited and individual instruction given. Health centers and free clinics should be organized with the school house as a meeting place. Sterile supplies should be provided at cost. The school teacher could give some instruction if she were capable. We must have better public health inspection in the rural homes. Here, often by chance, we discover contagious diseases raging with no effort made at isolation of the sick and in most cases, it is not even reported. By special legislation, we might accomplish much. The Sheppard-Towner Bill may help solve these problems effectively. At least it would do much to protect the prospective mother and her infant. We must face these problems squarely and do all in our power to give the expectant mother and the unborn infant the best possible chance.

DISCUSSION

Dr. Lydia Allan DeVilbiss, U. S. Public Health Service: The deplorable conditions surrounding the expectant mother in rural communities as described in this paper are not overdrawn. However, conditions just as bad exist in many cities. Lack of proper care of the expectant mother is not a problem of either the country or the city. It is a problem of public health administration, or rather lack of it. Where there is an adequate health department, either city or country, such conditions cannot obtain.

The method of caring for the expectant mother, however, differs in the country from the city. A few years ago a prominent public health nurse started to a distant state to open a prenatal clinic for rural expectant mothers. I offered to wage her a first class dinner if she could get the country mothers to attend regularly other than by paying them two dollars a visit. As yet I have had no taker for the dinner.

The Sheppard-Towner Bill has been mentioned as one of the means of improving the health of women and children. This is one of the 57 varieties of health bills which are continually being presented to Congress. None of them, so far as I know, take into consideration the fact that the protec-

tion of the health of mother and child cannot be separated from the entire public health program.

The health of the mother and baby cannot be separated from the health of the father, especially if he should have tuberculosis or syphilis. The health of mother and baby cannot be separated from that of the community in the control of communicable diseases, the protection of food and water supplies, and the provisions for public sanitation.

The United States is the only first class power in the world without a ministry of health, and an officer in the cabinet to provide co-ordinated intelligent health protection for the entire country.

The health of women and children will be properly protected only by an adequate system of health protection for the entire family and the community.

THE UNMARRIED MOTHER BEFORE AND AFTER CONFINEMENT

FOSTER S. KELLOGG, M. D., Boston

The problem of illegitimacy is so large and many sided that we may as well admit in the beginning that all agencies other than the state or central government are in a measure inadequate for its solution. Scandinavian countries and France recognize the truth of this: each attempts a state solution according to its temperament and point of view. In Scandinavian countries, paternity established, the child is essentially legitimized and its father must support it until it can earn a living. In France, if a child is illegitimate, it is not even legal to declare its father without his permission, but the state, if necessary or wise, becomes its adopted father and sees that it is reared in the country without want, and under state (official) supervision, and is taught a trade, as if the legitimate child of its foster parents. We have not the frank view point either of the one—that a man's responsibility for his children includes, under all circumstances, his illegitimate as well as legitimate children, or of the other one—that the state must protect the blood integrity of each family to the extent of itself assuming the fatherhood of illegitimate children. It is interesting to note how each system reflects each country in many ways—but most strikingly in relation to woman's position in that country—for Scandinavia gave birth to the "new woman," while France is still a stronghold of the "old woman." Each recognizes frankly that illegitimacy exists as a state proposition and would feel that our attitude—on the whole that it is an occasional accident fit for private charity and not of state importance—is a hypocritical one. However, we have not the continental point of view or the Scandinavian one either, nor is it proven that we should have, nor, probably, would their methods work with us. None the less, our solution worked out in accordance with our temperament lies probably with the state, at least in part—certainly it lies in the future, though illegitimacy has been studied for many years.

ONE GENERATION'S ILLEGITIMATES

I have just referred to the bigness of the problem and I would impress this further with a few figures from Massachusetts. In a few years prior to the war, from four to five per cent of all registered births in Boston were illegitimate, in round numbers eight hundred and fifty births a year. In the same year, two and a half per cent of births registered in the state were registered as illegitimates, over two thousand births a year. These figures, are, of course, smaller than the truth. In a twenty-year generation then, we have born in this state—and these figures show it is a state-wide problem, not a local one, especially as many of the Boston births are of outside Boston residents—between forty and fifty thousand illegitimate children, at the least, with the probability that a correct figure is sixty or sixty-five thousand.

THE PENALTY OF SEPARATION

These children are economically worth to the state one hundred million dollars plus, if they become good citizens; if they become bad ones, besides the loss of the one hundred million, they become a state expense along the routes of insanity, criminality, prostitution, and so forth, to an unguessable amount—and it is fair to assume that the neglected child born out of wedlock has less incentive to do right than the child of any other class. It is obvious that prostitution, criminality and venereal diseases are recruited from neglected women who have had illegitimate children. The infant mortality rate for 1914 for children born in wedlock was ninety-five. The infant mortality rate in 1914 for children born out of wedlock was two hundred and eighty-one, three times as great. This means that between one-quarter and one-third of the infants born out of wedlock die before they reach one year of age. This represents so much economic waste. The chief cause of this high infant mortality rate is separation of baby and mother.

The number of deaths under one month, per thousand illegitimate births, was two times as high as legitimate births; at one month it was eight times as high; at two months six times as high. This difference was most noticeable; the death rate from gastrointestinal disease was six times as great in illegitimate babies. These figures show the seriousness of the state-wide problem of illegitimacy.

SIN OR PROBLEM?

The first step in progress in the solution of the problem of illegitimacy in America depends on a reconciliation of two opposite or at least differing points of view. For lack of better terms these may be called the "Orthodox" and the "Social Service" points of view. It is not worth the space to trace the growth of these in the fields of illegitimacy, but it is apparent to any outsider touching the work that they exist—that they conflict—and that because they conflict they hinder progress. It is equally apparent that the "Orthodox" point of view sees illegitimacy in terms of *Sin* and that the "Social Service" point of view sees illegitimacy in terms of *Problem*. To the ordinary person of today, there is little to choose between listening to an exhortation before a gathering of illegitimately pregnant women on original sin and eternal damnation and reading the wordy "patter" of some professional social service investigator on the "key-concept" to be unearthed in studying case records. Both seem equidistant from tangible results and on the whole their past show that they are. The "Orthodox" point of view wishes soul salvation; the "Social Service" point of view seeks economic salvation—and the one is apt to criticise the other's work for putting stress on its own feeling in the matter. This hinders progress. They should realize that they are working for the same end and get together. It is hard for me to see that either is entirely right—saving a woman's soul may make her economically efficient, or at least willing to become economically efficient, or it may not; making a woman economically efficient may make a woman save her soul, or willing to save her soul, or it may not; but, and I believe that this is the crux of the situation, before you can save her soul or make her economically efficient, or both, you must discharge her after the birth of her baby only after such care and after such time that she may be self-supporting at work.

We may epitomize this one big outstanding fact by saying that, while it may be no economic importance if a woman with a husband to support her and her child is left in poor shape after childbirth, it is the *sine qua non* for her economic salvation that the mother with no husband to support her and her child must be discharged in the most perfect health she has ever enjoyed. That she shall have faith and religion either restored or inculcated, if pos-

sible, is highly desirable; that she be helped economically and studied as a problem is also highly desirable—and I do not see that these necessarily conflict—but that she enjoys perfect health to work is essential.

We next consider how to obtain this result under present conditions and with present existing facilities without taking the long and difficult step to complete State control.

MATERNITY HOMES

Passing by the use of boarding out in the carefully investigated family—except for the individual “exceptional case”—since because of its diffuseness this system obviously cannot attain the desired result, as becomes clearer when we see how much time must be used to attain it; and overlooking the “occasional case” where the girl’s family wish to keep her at home and shelter and provide for her, we find Maternity Homes. By keeping these at a high level of staff—superintendent, teachers, doctors and nurses, and social service—we may obtain satisfactory results.

Let us consider the arguments in favor of the use of the present homes: (1) The practical reason that they exist and would be difficult to get rid of, especially as they believe firmly in themselves and represent a large monetary investment; (2) that only in small institutions is it possible to get home atmosphere and personal contact with the Home mother and her assistants; (3) that they are relatively efficient. (a) Of the 847 infants of illegitimate parents in Boston, 49 per cent were born in hospitals, 25 per cent in maternity homes, 3 per cent in the public infirmaries, 23 per cent in private homes. Agency or death records show that 230 of 847, 27 per cent, had died before they were a year old. Of the infants born in private homes 24 per cent were known to have died; of those born in hospitals, 35 per cent; *of those born in maternity homes and the public infirmary, only 17 per cent.* (b) In the maternity home with which I am connected, 425 consecutive mothers, from 1914 to date, have been confined without a maternal death. In this time twenty-five babies died, a rate under 6 per cent. Of these ten were premature. Only one case in six years died of gastrointestinal disease. The average stay, post partum, in the institution was ten weeks. so that while this death rate is not

directly comparable, it does cover the first two or three months after birth.

The advantage of such Maternity Home care over that in the selected private home is that the woman and baby get two, three, or four months good prenatal care, the best possible hospital care in labor and the best postpartum care, so that the mother is sent out—and this is fact, not theory, because she can go only on the physician's say that she is fit to work—in such a state of health that she can support her child, and this is in the last word, what her salvation and economic worth depends on.

THE STAFF OF A MATERNITY HOME.

To accomplish this properly, it requires the following staff: first, trained obstetricians and hospital facilities (for we have handled contracted pelvis, adherent placenta, toxæmia of pregnancy, with or without convulsions, hæmorrhagic disease of the new-born, and so forth; and in this series we have made our own necessary repair work, cleaned up tubes, and done other necessary pelvic and general surgery); it takes a trained pediatrician for the babies; it takes a dental staff, an internist, a surgeon, an eye, nose and throat man, and a neurologist as available consultants. It is hard to see how this can be reproduced for illegitimates except in a Maternity Home.

I have outlined this in some detail to show not only the high degree of efficiency it is possible to obtain, at least medico-sociologically, in the existing agencies, but to back my contention that unless the maternity homes can and will show a good record of accomplishment they should cease to receive support, because a staff of high grade can be obtained for all of them. These results were obtained in a home originally and still fundamentally of the Orthodox type, but in which there is hearty accord between the trustees, superintendent, and the medical staff, and in which each group tends strictly to its own business, and in its own department is supreme; in a home inadequate to care for the various illegitimates it should care for, and to give its patients the exercise in the fresh air they should have, as it is in a crowded, poor part of the city. Incidentally, the staff is sufficiently large so that each man gives but a little time in each year to the work and every man of the

staff holds one or more, so to speak, major staff positions in bigger hospitals.

THE IDEAL HOME

In an ideal home we should get better results with gardens and outdoor porches, and better facilities for handling babies, with a distinct house for caring for venereal pregnant illegitimates and a syphilographer added to the staff; with a bit more breadth of social service and a greater individualization and mental study of each case by the neurologist working with the Social Service, with a view to placing it most favorably; with a wider publicity, and a carefully individualized study of the adoption question, with rooms to take back mothers and babies after discharge—for illness or rest, or during temporary unemployment while placing in better or different work, so that each mother would turn to us in trouble as to her real home—we should obtain results satisfactory for the country if such places were run in each community where needed. Further, we must evolve some system of grading and typing illegitimates before we start work with them, so that we do not fritter away the high cost on useless material and contaminate the hopeful individuals with the hopeless.

A STATE CLEARING HOUSE

The sanest solution to this end is to establish a State Clearing House or State Board for Illegitimacy.

This raises the question why, if maternity homes may be made to give good results, should there be a State Clearing House for Illegitimacy? Chiefly because there is little intelligence or rather little knowledge, and that not co-ordinated, on which to base intelligence, shown in the distribution of types of illegitimacy. The different agencies each have an idea of the type it works best with. A clearing house for distribution purposes would give them that type, but chiefly a clearing house would sort out the mentally deficient. The mentally deficient illegitimate gets in everywhere. She is said to be from 40 per cent to 60 per cent of all illegitimates. She is a menace and a useless expense because caring well for high grade illegitimates is very expensive. She should be sorted out and put where she has no opportunity to repeat. This a clearing house

agencies could handle these cases. Also, take the question of venereal diseased illegitimates. These represent 8 per cent or more of Boston illegitimates. Venereal disease is an accident of luck accompanying illegitimacy. There is no valid reason for making it a distinction against good care, rather the reverse. Yet as matters now stand, the woman unlucky enough to be infected must go to a less desirable place than one who is merely illegitimately pregnant. The clearing house would see to them through some designated, existing agency. There are certain types, as the very young and the very wilful, who are better cared for in private homes than in maternity homes, both for themselves and for the institutions. These the clearing house would see to through existing agencies which are familiar with this type of case, such as Children's Aid Societies.

This clearing house must of necessity be composed of representatives of each agency in so far as the placing of the case goes in the beginning, except that certain types like the feeble-minded and venereal cases will go directly to designated agencies. Only by this method will you prevent the jealousies of different institutions coming in. Placed from this clearing house, the report on each case, followed for one year if possible with the end result, must come back from each agency for compilation and study. In five or ten years this accumulated data will have sorted the women into different types and will show what types are best handled in each way. In this way only can progress be made in the study of this great economic problem, and advance made. Only in this way can we study prophylaxis of illegitimacy.

CONCLUSIONS

1. That illegitimacy is a State problem.
2. That at present little or no progress is being made with the problem in this country.
3. That the best form of care for high grade illegitimates requiring care outside their own homes—with a few exceptions—under present conditions, is the well equipped, well staffed Maternity Home.
4. That the worst form of care under present conditions for illegitimates—with a few exceptions—is a public lying-in hospital

or maternity wards in public or semi-public general hospitals, because they are usually taken in only in labor and put out too soon.

5. That the best form of care for low grade illegitimates—with a few exceptions—under present conditions is the State institution.

6. That the medical and social service standing of the Maternity Homes be kept to as high a degree of efficiency as possible under State Board of Illegitimacy supervision.

7. That the chief reason for no progress is lack of an adequate machinery for sorting, distributing and recording of end results, and for co-ordinating effort, expense and information.

8. That such machinery may be obtained from a central clearing house composed of a representative of each agency, under the directorship of a long-time chairman, with the physicians, social workers, and clerks necessary.

9. That the cost of such a board should be supplied by the agencies interested, including the Commonwealth.

10. That in addition to the fact that a clearing center would reserve only the worth-while-working-over women for the more expensively run agencies, it would be of equal or greater use economically in early segregation, and early getting under observation a large number of mentally deficient whose first tangible evidence of their mental condition is pregnancy.

11. That the problem of illegitimacy is big enough to be handled and should be handled as an entity—directed legally, sociologically, and medically—loosely at first until knowledge is accumulated—under one office; that any legislation, as for example, a proposed Maternity Pension Bill, should not include clauses concerning illegitimacy because it will increase the present too great decentralization and so add to the present confusion.

DISCUSSION

Dr. Lydia Allen DeVilbiss, U. S. Public Health Service: In the discussion of children born out of wedlock, I wish that we might get away from the expression "illegitimate children." But that is hardly possible so long as illegitimacy is a classification created by law. A child *born in wedlock* is in law the child of its father and therefore legitimate. A child *born out of wedlock* is in law the child of its mother and is consequently illegitimate.

As the death rate of infants born out of wedlock is several times higher than children born in wedlock, it would seem that these children should have

especial attention from State Directors of Child Hygiene. Where such Division is already in operation, it would hardly seem necessary to create a special board for dealing with illegitimacy.

Rather than create a special board for alleviating the condition of illegitimate children and their unmarried mothers, why not take certain steps to abolish illegitimacy or to reduce it to its lowest possible numbers. To do this it is not necessary to rewrite whole chapters of the general statutes dealing with the subject, most of which was enacted fifty or more years ago and has not been amended since. The simplest way is to have enacted an amendment to the effect that every *child born is in law the child of its parents*. It may be desirable to create modern machinery for determining the paternity of a child born out of wedlock, but that provision may be worked out at subsequent sessions of the legislature, if not at the time.

The effect of a clause in the statutes that every child born is in law the child of its parents is to make every father of a child born out of wedlock responsible for its care, support and protection precisely as he is now responsible for his child born in wedlock. And the machinery for apprehending and dealing with fathers who desert their minor children will at once be available also for the children of the unmarried mother. This provision would at once act to reduce the numbers and the problems of the unmarried mother and her child.

■

INFANT CARE

JOINT SESSION WITH CENTRAL STATES PEDIATRIC SOCIETY

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THE PREVALENCE AND MANAGEMENT OF TUBERCULOSIS IN INFANCY

THEODORE C. HEMPELMANN, M. D., St. Louis

There is a common, but totally erroneous impression among the laity that tuberculosis is frequently, if not usually, a hereditary disease. In point of fact, instances of tuberculous infection present at birth are so rare as to be looked upon almost as medical curiosities. Tuberculous parents, however, frequently bring forth premature, under-nourished or weakling children who offer little resistance not only to tuberculosis, but to other infections as well. At all events, infection with the tubercle bacillus usually takes place sometime after birth and from one of two great sources; namely, exposure to another individual who is suffering from the disease, or from an infected milk supply. Of these, unquestionably the former is by far the more important, at least in this locality, and perhaps the explanation of the relatively insignificant role played by contaminated milk as a cause of tuberculosis in infancy, may be found in the ever increasing use of certified milk, obtained from tuberculin tested cattle, and the common practice of boiling or pasteurizing milk for infants.

It is a matter of common knowledge, repeatedly verified at the autopsy table and elsewhere, that infection with the tubercle bacillus is well nigh universal among adults. It is equally well known that for the most part this infection takes place during the period of childhood, and indeed it is possible, by means of simple tuberculin tests, to show how the incidence of tuberculous infection gradually increases with the age of the children so tested. For example, at birth we find no positive reactions, at one year of age perhaps a few and at 10 to 14 years 40 per cent or more of the children react positively to tuberculin tests, thus showing that they have been infected with the tubercle bacillus. Indeed, in certain localities, notably some of the cities on the European continent, it is claimed that at 10 to 14 years, the number infected reaches a

total of 90 to 95 per cent. In referring to such figures, however, it must be remembered that a sharp distinction is drawn between infection with the tubercle bacillus and tuberculous disease, and that many of these children will never show any ill effects from this infection, nor will they have the familiar signs and symptoms of tuberculosis or consumption.

Ordinarily, the "dose" of such tubercle bacilli with which we are infected, is a relatively small one, insufficient to produce the usual clinical evidences of tuberculosis, but sufficient to stimulate the body to produce certain protective substances against future similar infections. This probably constitutes a large part of the defense mechanism of the body against tuberculosis. The power of producing such protective substances or antibodies, however, is apparently acquired quite slowly, and the younger the child at the time of infection, the feebler his resistance to tuberculosis. Consequently the percentage of children who develop active symptoms of the disease after infection with the tubercle bacillus is much higher during the period of infancy than in later childhood. Furthermore, the mortality among infants infected with tuberculosis is appallingly high, being 78.7 per cent during the first year of life, according to our figures, and 57.4 per cent between the ages of 1 and 2 years.¹

Statistics as to the frequency of tuberculosis in infancy, as shown by autopsies, vary considerably. For example, Holt² quotes the figures from three New York hospitals with a total of 4,046 autopsies on children nearly all of whom were under three years of age; of this number 538, or 13.3 per cent, showed tuberculous lesions, and in over two-thirds of these, this disease was the chief cause of death. In Feldman's³ autopsies 43 per cent of the children dying between 1 and 2 years of age showed tuberculosis, and Hamburger⁴ in Vienna and Comby⁵ in Paris each found 40 per cent at this age. Such figures, although of little value in fixing the true incidence of this disease, nevertheless emphasize its importance as a common cause of death in young children. Perhaps a better conception of its relative frequency may be gained from the statement that during the past year about 3 per cent of the babies admitted to the infant ward of the St. Louis Children's Hospital were found

to be suffering from active tuberculosis, and this despite the fact that the majority of our cases in infancy are so-called "feeding cases," that is children with some nutritional disorder who are not sick in the ordinary sense. In short then, we may say that tuberculosis is not only of relatively frequent occurrence in infancy, but assumes an augmented importance at precisely this age, because of a mortality which is never approached at any subsequent age period.

Management: Because of the strikingly low resistance of infants to tuberculosis and the consequent high mortality at this age, the *prophylaxis* is of paramount importance. This should include first of all the prompt removal of the infant from the tuberculous environment, whether the potential source of infection be the mother, other relative, or friend. The child should be guarded against even the briefest exposure to all persons in whom there is a suspicion of active tuberculosis. In this connection it should be emphasized that nursemaids and other caretakers are occasionally an unsuspected source of such contagion. Secondly, every young child should be protected as carefully as possible against exposure to the acute infectious diseases, but especially those like measles and whooping cough, which are known to diminish further the resistance to tuberculosis. The baby should have a limited number of trusted caretakers, and the promiscuous handling and kissing by relatives, friends and admirers should be discouraged. If it is learned that exposure has taken place, efforts should immediately be redoubled to build up the general resistance of the infant before the development of symptoms. He should be given the benefit of an antituberculosis regime, as strict as though infection were known to have occurred. And finally, the value of breast milk in increasing the resistance of the young child to all infections cannot be over-emphasized.

Once infection with the tubercle bacillus has taken place, the chief hope of the infant will rest on early recognition of this fact and the inauguration of a proper antituberculosis regime. The diagnosis of tuberculosis in its early stage is frequently exceedingly difficult, even when signs of activity are present, and is, of course, usually impossible before this time. During the period of

infancy, however, early recognition of the infection may be immensely simplified by the use of the simple and harmless tuberculin skin tests. Either the von Pirquet, or the intradermal reactions may be used, and a positive result at this age is presumptive evidence of an active tuberculous infection somewhere in the body. This test should be a routine procedure in all infant welfare conferences, clinics, hospitals, etc., and should be repeated perhaps every 6 months on each infant. Children from a tuberculous environment should have their records so tagged or marked as to draw attention constantly to this increased hazard. Once the disease is present, the child should be removed from the infective zone to prevent "massive dose" infection, and a strict antituberculosis regime should be instituted. The latter should include removal of the child to the country when possible, and provisions for supplying an abundance of fresh air, day and night, without, however, subjecting the infant to the rigors of highly inclement weather. Every precaution should be taken to prevent exposure to other infections, and a scrupulous attention must be paid to the problem of nutrition. Success will only be attained after a long struggle against heavy odds and many discouragements, but with proper co-operation between physician and caretaker, and the adoption of some such routine as has been outlined, there would seem to be no question but that the present high mortality of this disease among infants can be very materially reduced.

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DISCUSSION

Dr. Taliaferro Clark, U. S. Public Health Service, Washington: You have all heard the old saying about taking coals to Newcastle—the folly of it. Similarly, I think that an attempt to discuss Dr. Hempelmann's extremely instructive paper with the view of adding something new would be comparable to taking coals to Newcastle.

I should like to say in the first place, that in our efforts to solve this problem we must know how many infants there are who are infected with tuberculosis. Dr. Hempelmann has alluded to the percentages at the vari-

ous age periods. There are several ways of determining this, as he has so ably told you. First, as evidenced by necropsies; second, by the result of skin tests; and the third, I feel should be by a study of the infant mortality records of the health departments for deaths of children from meningitis and obscure causes occurring in tuberculous families.

I should like to emphasize the fact that the study of statistics from various parts of the country reveals very marked differences which leads to the conclusion that the number of tuberculous children varies in different sections of the country, as might be supposed.

It has been stated that the von Pirquet test is a more definite sign of human than of bovine infection. While there is no doubt but that this test is diagnostic of both types, it is interesting to note that Surgeon F. C. Smith of the U. S. Public Health Service, in an investigation of the prevalence of tuberculosis among the Indians of the Southwest, observed a very high percentage of positive von Pirquet's in a tribe of Indians who consumed no milk or milk products.

I am much interested in the report by Hamburger and Sluka of tuberculous children who died from tuberculosis. In children under fifteen years they found tuberculosis to be the cause of death in all cases under six months of age. This emphasizes the extreme mortality in young infants and the necessity of removing and protecting them from sources of infection at this early age.

The prevention of tuberculosis has been epitomized by Fordyce as healthy children, safe milk and avoidance of infected adults. The object of the American Child Hygiene Association to secure to the child a healthy birthright, is one of the ways of satisfying the first postulate. The safe milk supply is secured by pasteurization in private or municipal pasteurizing plants, and by eliminating tuberculous cattle. The avoidance of infected adults is accomplished either by removing the sources of infection or by removing the infant from possibility of contact. Karl Pearson asserts that the tuberculous father is almost as dangerous as the tuberculous mother, and more dangerous to the children of early age than he is to the mother. Pearson is a strong believer in heredity as a factor. He says that if 90 per cent of children under a given age have been infected, obviously they do not ~~all come from tuberculous parents~~ and there must be other factors concerned in the development of tuberculosis. Bushnell, I believe, makes the assertion that the child who has ~~received a massive infection in early life, which~~ is arrested, is more apt to develop fulminating tuberculosis in adult life.

The point has been admirably brought out by Dr. Hempelmann that the reason why the younger the infant when infection takes place the more certain a fatal outcome is because, by the very nature of things the infant is exposed to more massive infection, while at a later period, through repeated small doses, he acquires a certain type of immunity. However, there is a fruitful field of study to determine why it is that the disease is arrested in a certain number of children whereas others die. It is not yet known what special form or forms of stress conduce to this latter result. A further

study is still needed to determine whether infection in childhood remains latent and tuberculosis in the adult is but an exacerbation or "lighting up", of an old process. It is a point to be considered, barring young infants, whether or not, with increasing knowledge of the role of stress and its control, children should be permitted to establish a relative immunity through contact.

I have nothing further to add to Dr. Hempelmann's paper and find it difficult, in the compass of a three minute discussion, to extract from the enormous volume of the literature of tuberculosis and from the storehouse of experience the items which would be of most value to you.

Dr. May Michael, Chicago: There is a general impression among physicians and laymen that tuberculosis in infancy is rare. This conclusion is based for the most part on the study of statistics, but these statistics do not give reliable data. They have been so compiled for the most part as to compare the number of deaths from tuberculosis with the number of deaths from respiratory and acute intestinal diseases. We all know the great prevalence and seriousness of these conditions during the first year of life and, when we compare the 2 per cent death rate from tuberculosis with the 25 per cent rate from intestinal infection, we get the impression that tuberculosis is not frequent. It was Dr. Hess of New York who called attention to the error of drawing conclusions from these comparative figures and he prepared tables which told the real story. These show the total mortality from tuberculosis in New York during every year of life, and that there was a total mortality of 1,269 during the first year, a truly significant number, equalling the total mortality during any other year, except, perhaps, that between the thirty-fifth to the fortieth year. Dr. Hess laid emphasis upon the fact, known to many of us, that tuberculosis in infancy is very difficult to diagnose, and, if the many cases which are overlooked were added, it would be found that the total mortality during the first year is even greater than any other year.

A few years ago I became greatly interested in this subject and thought, as Dr. Hempelmann does, that the difficulty of feeding babies in the large hospitals was due not to the method of feeding but to the fact that many of the infants were tuberculous. For a period of six months I made a study of the so-called "feeders" at the Cook County Hospital in Chicago. Four procedures were carried out. A social service worker was sent to the home and obtained a history of any possible source of infection—if any one in the family had tuberculosis, if there was a boarder with a chronic cough—and, when possible, the history of those who occupied the house before the patient's family. A careful physical examination was made and charted, an intra-cutaneous tuberculin test performed, and a roentgenogram taken. In a number of instances an autopsy was obtained. In the six months 3 per cent of the babies were found to have tuberculosis. These results correspond with Dr. Hempelmann's findings and show that tuberculosis is not infrequent in infancy.

This study brought out another point, the importance of the prophylaxis of this disease. In nine out of fifteen infants there was a direct history of exposure to tuberculosis. In six cases it was the mother who had the disease or had died of the disease shortly before the baby entered the hospital. A tuberculous mother should never take care of her baby. She certainly should not nurse it. A baby should never remain in the house where there is a tuberculous individual. A baby may become infected with only a few hours' exposure; with daily contact infection is inevitable. The babies should be boarded out with relatives or reliable caretakers, placed in preventoria, or the tuberculous individual should be removed. More care should be taken in the selection of nurse and house maids. Lately in my own practice a baby of one year and a little boy of four years became infected from a housemaid with an open tuberculousis.

Dr. Hempelmann mentioned the danger of infection from bovine tubercle bacillus. It is well known that the greater danger is from human infection, but the danger from bovine infection must be kept in mind. It has been estimated that 25 per cent of the children with tuberculosis suffer from bovine infection. A very interesting piece of work was done recently by Dr. Mitchell of Edinburgh. Dr. Mitchell knew that there were many tuberculous cattle in the vicinity of Edinburgh and he collected samples of milk from dealers in that city. Of 406 samples 82, or 20 per cent contained the bovine tubercle bacillus. In Edinburgh the children are very frequently found to suffer from glandular and bone tuberculosis, forms which are usually due to the bovine bacillus. These children are usually fed raw milk, as it was not the common custom in Edinburgh to boil the milk. Commercial pasteurization of milk and eradication of infected cattle are the measures for prevention of bovine infection, but these are done so irregularly that home pasteurization and boiling of milk are the only reliable procedures.

After the child has been exposed to tuberculosis the tuberculin test should be made frequently, in order to ascertain, as soon as possible, when the child is infected. Infected children should be kept in the best hygienic surroundings and the babies should be given breast milk, if possible. If an active tuberculosis develops, very little can be done. Treatment of tuberculosis in infants is very unsatisfactory. Time and again we see in the literature over-enthusiastic reports upon this or that method of treatment with tuberculin. Not long ago Jeanneret of France reported some very good results from the use of the intradermal method of treatment, but this has proved of very little value in the treatment of active tuberculosis and, after all is said, the first and last word in the treatment of tuberculosis in infants is *prevention*.

Dr. Collins H. Johnston, Grand Rapids: The importance of early diagnosis has been so emphasized today, and the use of the tuberculin test for that purpose is so important, that I want to make a few remarks upon it. Some years ago the National Tuberculosis Association appointed a commit-

tee to draw up standards for the diagnosis of tuberculosis in children. A committee consisting of ten or fifteen of the leading specialists took it in hand. The Chairman was John B. Hawes of Boston. In their standards they said one should make three cutaneous tuberculin tests two days apart. In my work I have found that the second test will bring out a positive response in cases where the first was a failure, and the third test will bring out a still larger percentage of responses. Two or three years ago Dr. Hess of New York brought out an article containing the statement that intradermal tests repeated at intervals of two or three days brought out a very much larger percentage of positive cases than these cutaneous tests. Not knowing much about sensitization I took the matter up with Dr. Vaughan of Ann Arbor, whom you all know as an expert in sensitization, and he expressed the opinion that one could take any child and with six doses of tuberculin could sensitize it and get a positive reaction in that time. I then took it up with Dr. Heise of Saranac Lake and he, without having heard Dr. Vaughan's opinion, expressed the same opinion, that six tests would bring out a great many cases of positive response simply by the artificial sensitization of the child. Then I took it up with Dr. Hawes and told him the opinion of these men, and after talking it over with his committee, he said he would stand by his guns—in order to exclude tuberculosis in a child give three skin tests, at an interval of two days.

We have recently established a preventorium, the first of the kind in Michigan, with a capacity of twenty-five beds, and I am looking forward to the day, perhaps not so far distant, when we will have a preventorium for the infants.

I do not think we realize the short length of time a baby has to be exposed to tuberculosis before it contracts the disease. One baby I know of was exposed to tuberculosis about four hours and died of tuberculous meningitis four months later. Another baby that I knew very well had only been exposed to tuberculosis one and a half hours and died of tuberculous meningitis. When I was in Vienna, Hamburger told me that one tubercle bacillus would kill a guinea pig, and he was sure that a baby would be killed by fifty, so we must take home the idea that a very brief exposure only, is necessary for the infant to contract the disease.

Question: What effect would an arrested case of tuberculosis have on a child?

Dr. Charles Hendee Smith, New York City: I want to emphasize the fact of the brief exposure. In a hospital in New York City three babies under two years of age were exposed for two nights by contact with the nurse. All three developed tuberculosis and tuberculous glands of the neck, very bad cases, and they were only together with the nurse for two nights.

Another point is the infection from nursemaids. I have in my records ten children in private practice who have been infected by nursemaids. I have come to the point where I insist on my families having their nursemaids and other servants examined at the time they employ them, or when they

apply for the positions. I have had this done in my own family three times. I think the time will come when we must demand a health certificate from everyone applying for employment. The danger is so great that persons going into service in families, especially as nursemaids, should present a health certificate before they are employed.

Dr. Hempelmann (closing the discussion): With respect to Dr. Clark's remarks on the incidence of the disease, it is quite true that we have no reliable figures as to just how prevalent tuberculosis is in infants. It seems to me the only way by which we could arrive at any definite conclusions in this respect would be by the employment of the tuberculin test on children as they come to the dispensaries, infant welfare stations, etc. We have started such a study in St. Louis but we are not yet far enough along to have any clear idea of the prevalence of the disease in the city.

Dr. Michael mentioned the unreliability of statistics. That, of course, is well recognized. The figures I quoted as to mortality are very low as compared with most statements. I am by no means convinced that every child under one year who is infected with tuberculosis dies. I think they will many times recover if given the same chance that is extended to the adult. Many of them will undoubtedly recover. We have had many children under our care who have had a positive diagnosis during the first year with tubercle bacilli in the sputum, who are living nine and ten years afterward, and now are apparently entirely cured. It seems to me very unfortunate to weigh breast feeding against removing the child from the mother if she happens to be a source of infection. Breast feeding is very important, but artificial feeding when properly done is very good, and the mortality from nutritional diseases is not in the same class with the mortality from tuberculosis. I am also quite convinced that these babies can be spared tuberculosis if they are promptly removed from the mother. I am sure that all pediatricians have cases in which the child was removed from the mother very shortly after birth and several years later showed no evidence of tuberculosis. This is aside from the fact that the tuberculous mother should not be asked to go to the additional strain of nursing her baby. She has enough to do to overcome the infection in herself.

Dr. Michael also mentioned the study in Edinburgh concerning bovine tuberculosis. It seems definitely proved that the incidence is very different in different localities. I am sure we have not as much in St. Louis as there is in Berlin and Vienna and other places. I am also sure that in Edinburgh they have a larger percentage of bovine tuberculosis, although it must be acknowledged that it is very difficult to differentiate between the two. It is not conceded that this differentiation is absolutely accurate in every respect. In Edinburgh it must be remembered that they have a lot more glandular and bone tuberculosis than we have, and it is quite possible that it may be a manifestation of bovine tuberculosis, but just because a cow is infected does not mean that the milk is necessarily infected. It takes tuberculosis of the

udder to infect the milk. If pasteurization is carried out carefully all traces of tuberculosis may be eliminated.

I was asked whether an arrested case would be a source of infection to the baby, or what effect it would have on the child. That would depend upon whether you mean a closed case, one in which the bacilli cannot be spread around and get into the saliva. It depends entirely upon whether such an individual is giving off bacilli. If no tubercle bacilli are being given off, then that individual is not a source of infection, but just because a person has gained in weight and has no fever it does not necessarily mean that he or she is not a source of infection. All who have to deal with tuberculosis know that many of such individuals have bacilli in their sputum long after these signs are absent.

Regarding sensitization to the tuberculin test, our experience has been that of Dr. Hawes—that in spite of repeated tuberculin tests when we obtain a positive test we feel that we are dealing with a tuberculous infection. We have many cases that have been subjected to a great many tests, and always negative, where we were searching for some cause of malnutrition; the child on admission to the hospital had repeated von Pirquet tests made, without ever giving a positive reaction.

Dr. Clark: I want to say just one word more for I do not wish you to go away with the idea that I am not an advocate of removing the child from the source of infection. In the Public Health Service we always teach, if you cannot remove the source of infection—remove the individual if possible.

RURAL INFANT CLINICS: HOW CAN A PUBLIC HEALTH NURSE ORGANIZE THEM?

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In considering my subject, the different viewpoints gained by placing the emphasis variously upon its phases are illuminating in revealing the difficulties which beset an attempt to reduce them to simple terms. For example, first: Can a "public health nurse" organize "infant clinics;" why not a physician or a social worker? Has a "nurse" ever done so successfully? Second: How may such clinics be organized? What is to be the method and the means? Third: Why "infant clinics" only, when such serious health problems exist as malnutrition among school children, and tuberculosis? Can "specialization" be carried into the country? Why "clinics?" Do we use this term in the sense of its common application in cities? And, fourth: How is such an end to be achieved, especially in rural communities? What do we mean by a "rural community?"

We shall assume at once that our discussion will apply to the possibility of such organization in rural communities, since infant clinics in cities have been the subject of the skill of professional and administrative organizers for a considerable length of time and have thereby obviated the chief reason for the projection of the nurse into the field of administrative organization.

It may be well to state at this point our conception of the principle of successful organization, viz., first, a consideration of the elements of an investigation; second, a plan or scheme; third, a trial of the plan, and fourth, the correction or modification of the plan as the result of experience. To the questions outlined above, we shall attempt to offer answers, which are necessarily tentative in view of the limited experience in the field the topic suggests.

WHAT IS A RURAL COMMUNITY?

Let us consider first what we mean by a rural community. The U. S. Bureau of the Census classifies as such "all places or districts

having a population less than 2,500." The Standard Dictionary defines community as a "body of persons with common interests." Dr. H. N. Morse, of the Presbyterian Board of Missions, at a meeting of the National Conference of Social Work, offered as a tentative definition, "the unit of territory and population characterized by common economic and social experiences and interests." Still another definition of unknown authority is, "a group of farmers with a common trading center as opposed to a trading center surrounded by farms."

The trading center is a development of rural community life and is dominated by it, rather than dominating or controlling it. The one time trading center grown to a village, and having developed common interests apart from the agricultural groups around it, is still rural in the sense of having a limited population. Clearly the limitation imposed by the definition of a rural community as a "group of farms" is too narrow. It is more properly a neighborhood or a group of neighborhoods, with a spirit and characteristics in direct relation to the character and leadership of its citizens. Since communities may be more accurately measured by population than by types or characteristics, and in the absence of defined boundaries for a unit of territory, we shall accept for the purposes of our discussion the definition of the Census Bureau, viz., "all places or districts having a population less than 2,500."

DISTRIBUTION OF RURAL CHILDREN

The isolation of the rural child and the difficulty in identifying him with a tangible group have belittled his importance in mere numbers in the public mind. In the face of the positive and dominating identity of cities, it is hard to believe that sixty per cent of the children of the United States in 1910 lived in the country. About six and a half millions of them were children under five years of age. Distributed among the large geographic divisions of the country, three and a third millions of these very young children lived in the Southern States, nearly two millions lived in the North Central States, slightly more than seven hundred thousand in the New England and Middle Atlantic States; while the remainder, approximately four hundred thousand, were in the Mountain

States (Wyoming, Utah, Colorado, and New Mexico) and the Pacific States (California, Nevada, and Arizona). There are wide differences in the composition of the child population and in the character of the problems in these geographic divisions. For instance, nearly one million of the children under five in the rural South are negroes; and in the Western States (the Mountain and Pacific divisions) where children under five are about half as numerous as in the New England and Eastern States, the area in the smallest State in the Western group exceeds the area of all the New England States together. Thus isolation and the problems of transportation are many times greater in the West than in the East. These facts are cited mainly for the purpose of making clear the nature of certain problems involved in planning a health service for infants and young children living in the rural districts of this broad land of ours, and the necessity for the full consideration of local conditions.

THE COUNTRY DOCTOR

Before consideration of ways, methods and means of organization, let us ask next if a public health nurse can organize such a health service? If she can, should she do so, and why? Why not a physician or social worker? The country has few social workers when one includes in this group only those persons with training in the field of professional social work; they are therefore excluded from consideration here. The country doctor has long been a member of the rural neighborhood; he is pledged by his training and by his Hippocratic oath to the relief of suffering humanity; in many instances he has devoted a long life to this end. The emphasis of this generation upon the new public health, apparently sweeping aside the old regime as unavailing and unprofitable, has turned his reflection upon these rewards for long preparation and a lifetime of service to something akin to bitterness, and has engendered a lack of sympathy, misunderstanding and even open hostility which may effectually defeat the aims of the newer program. The country physicians are frankly interested in pathological conditions; the prevention of disease is considered an academic question. Their training and their practice has been in terms of individual cases of sickness and not in terms of community or public health.

PUBLIC HEALTH NURSES

How are these men to be won to ally themselves with the cause of public health? As Miss Marriner, of the Alabama State Board of Health, has recently well said: "Apparent disparities of interest, such as that between preventive and remedial medicine, may be disproved in practice by showing that good preventive work but offers to remedial medicine a wider reach and a better grasp of its own field, and make possible the practice of medicine upon ever higher planes of effectiveness." We believe that the public health nurse, through the organization of health services in the country, may so demonstrate good preventive work as to harmonize these conflicting interests, creating mutual sympathy with and understanding of aims and motives.

A TYPICAL RURAL CLINIC

As an illustration of this point, the rural clinics carried on in Kalamazoo County, Michigan, under the Red Cross County Nursing Service at intervals during 1920 are of special interest.

The county is approximately square, with an area of 562 square miles. The rural population is about 20,000, which includes the entire county with the exception of the city of Kalamazoo, the county seat. The six villages range from 300 to 1,600 in population.

The county was districted among three nurses, two of whom lived in the county seat, the third living in the central part of her district.

The services of the nurses extended to children of all ages, the larger proportion to the examination of school children, among whom the usual kinds and numbers of defects were found. The chief factors in the problem of rendering a health service for these children were, first, transportation difficulties, the short season of good roads, and the relatively large area to be covered by one person in that time; second, the inaccessibility of expert professional service for diagnosis and treatment, and third, the natural tendency on the part of the country parents to look upon the correction of defects more or less as "new fangled notions" and to postpone consultation with their physician until a more convenient season even for the more urgent cases.

All of these factors were sufficient reasons for the organization of group service for the children and accordingly the rural clinics were developed.

The health needs of the school children were discussed with the local physicians and the possibilities of a local clinic suggested to them. They were asked to name the specialists and other physicians with whom they wished to serve; these included an oculist, an ear, nose and throat man, an expert in

infant care and one in tuberculosis, all of whom, when interviewed, were willing to serve without charge. On the clinic day, the local physicians acted as hosts to the visiting men and received patients in the division known as the "Clearing House Section," from which they were assigned to the various specialists.

The three rural nurses were on duty assisting at the different stations. One of the number with a special aptitude for infant care was on duty in that department the entire day.

Lay women from the neighborhood kept the records of the physical examinations and the recommendations for treatment on special printed slips provided with carbon; one copy was kept by the nurse and the other sent to the local or family physician.

The clinics have been held in the largest school house in the community which usually embraced several school districts. School has been dismissed for the day, the teachers either joining in volunteer service or taking the opportunity for teachers meeting with the county school commissioner. A general program has been provided for the entertainment of the fathers and mothers while awaiting the examination of their children; music has been furnished by the normal school of the county seat and a popular speaker known at least by reputation in the county, has given a lecture. In the evening stereopticon slides on a general health subject have been shown, the machine having been connected by means of extension cords to the nurse's automobile, when electricity was not available locally.

Notices of the clinic were sent home by the children and posters of bill size giving the full program for the day were distributed in advance throughout the community. These announcements carried the item that the families were invited to bring a pot-luck dinner and spend the day. Four such clinics have been held in different parts of the county this year with attendance running into the hundreds.

The director of the nursing staff moved freely among the different groups during the dinner hour, conversing with many but in the main listening for interpretations and reactions of the clinic upon individuals. In general, there was an absence of the usual extreme sensitiveness and reticence in discussing the health problems of individual children, and a tendency to consider them as health problems common to the group; a real beginning of thought upon health matters as the concern of the community, offering a basis of team thinking which might serve later as the foundation for group action.

The immediate results of the clinic were two-fold; first, the local physician was more firmly established in the confidence of his patients. In several instances, his own diagnosis of incipient disease had been corroborated by the specialist and his instruction regarding treatment and care emphasized and enlarged upon. Second, the local physician was aroused to his own need for newer, more recent knowledge in the field of medicine, both preventive and remedial, and his contact with experts in special fields proved both stimulating

and educative. His attitude of benevolent toleration toward the public health program has by degrees become a positive one of open-mindedness and cordial co-operation.

The establishment of this wholesome and desirable relation with the local physicians and the hopeful beginnings of team thinking and community participation in health programs seem to me fully to justify the organization of such rural clinics. Their success has been due in large measure to the leadership, the administrative ability, and the high ethical standards of Miss Trafford, the nurse-director of the Red Cross County Nursing Service of Kalamazoo County.

Aside from those two notable achievements, the fact should not be overlooked that diagnoses were made and treatments either begun or planned for a large percentage of children with physical defects. Attention is called to this point as evidence of our belief that the time has passed when public health organizations are willing merely to examine the same children year after year and to compile reports of their uncorrected physical defects.

FAMILY HEALTH SERVICE

The limitation of the clinic's service to infants seems undesirable when other experts are available, mainly for the reason that the rural mind more readily comprehends a family health service, such as for example the performance of the public health nurse in caring for all members of the family when illness occurs. The parent, and in Kalamazoo, fortunately, both parents, sees the relation established between the expert and the local physician and the public health nurse. It is not so certain that the organization of infant clinics alone would prove so effective a medium for making these relationships clear. The convenience of the family living in the country is also to be considered. Parents will willingly devote a day to such a program as that of the rural clinics just described; on the other hand, if the mother were asked to take the baby one day, the school child another, and perhaps to go to the doctor for herself at another time, it is probable that with genuine regret she would be unable to comply. The degree to which specialization can be applied in country districts is necessarily limited, but there seems to be no sound reason why its benefits may not be made available through some modified form of organization hitherto untried or unthought-of.

HEALTH CENTERS AND CLINICS

For the rural community with resident local physicians having access to the service of experts and specialists at least once a year through the organization of rural clinics either general or limited in their service, the experience of Kalamazoo County may prove suggestive and illuminating. But rural communities with such advantages are commonly the exception rather than the rule. In the South, the Middle West and the Far West are many counties with no small town as a population center from which expert assistance might be drawn. For such communities the organization and maintenance of an educational and nursing service through health centers seems possible and practicable. There is at present such confusion of nomenclature in the public health field that a definition of the terms clinic and health center seems important. The term "clinic" we interpret as applying to places for the diagnosis and treatment of illness among ambulatory patients. By "health center" we mean a place where any health service may be rendered; it may include a clinic, a dispensary, a loan closet, a demonstration station, a laboratory or a nursing service, or all of these things; nutrition classes, little mothers' leagues and real mothers' clubs may hold meetings there. In brief, it may be the pivot about which the health activities of the community revolve.

AIM OF HEALTH SERVICE

The fundamental principle upon which successful health work in the country depends is that the health of its citizens become the concern of the community rather than of one professional group; that the ultimate aim of the health service be the development of positive vital physical well being rather than the mere absence of disease. Country people are still uninformed about much of the public health movement, and the best means for their education is an active participation in the establishment and conduct of a service for which they are convinced of the need and the subsequent development of other services as the need for them is appreciated.

The health services which the nurse may render at such centers either with or without a medical attendant are (a) the periodic

weighing and physical inspection of children, particularly those under school age; (b) consultation with mothers on the care, feeding and general hygiene of children; (c) consultation with pre-natal mothers on the hygiene of pregnancy; (d) demonstrations of preparation of foods, the preparation of maternity supplies, and the simple procedures in the home care of the sick.

DOCTORS AND HEALTH CENTERS

The adjustment of the relation between the health center and the local physicians has been the most difficult problem; it has been the rock upon which a number of health centers have foundered. Rotation of physicians by periods varying in length has been tried, frequently proving unsatisfactory for the reason that the physician on service is unable to carry his patients entirely through to a satisfactory outcome and that the patients of one physician are seen by other men. Physicians have hesitated to serve for another reason also, viz., that the numbers of patients seen at such centers who are in urgent need of medical service are too small to justify the amount of time the medical man spends there. They have suggested as a substitute plan to obviate these difficulties the following: They will see at their offices during regular office hours any patient whom the nurse may send to them from the health center; they have offered, furthermore, to give full consideration to reports of the nurse upon the financial and social condition of the patient. By this means, the health center maintains its status as an educational and nursing station; patients remain under the care of their family physician either with or without payment of a fee; the nurse is at the service of all the physicians in the community; and the opportunity for differences of opinion regarding assignments of patients and allotment of medical service is reduced at least to a point of safety.

There seems to be slight hope of securing experts for these communities except through their employment by state departments of health, or private state or interstate organizations. Such specialists may hold conferences at intervals which may well serve as institutes for local physicians and public health nurses.

"BEDSIDE CARE"

The mothers and children who come to the center are naturally recruited from among those whom the nurse cares for at home. The most effective means of gaining immediate confidence of country people is by giving bedside care to sick patients. Since it is not possible to carry out the usual visiting nursing service for the sick in rural communities, such a program is necessarily limited in its application. For example, maternity nursing has been and is now being successfully given in some parts of Kent County, Michigan. The service speaks for itself; it needs no propaganda and carries the opportunity for teaching infant hygiene in the home, with continuous supervision of the babies through the health center.

HOW TO INTEREST THE PUBLIC

The participation of rural citizens in the establishment and conduct of the health center may be cultivated by providing specific and concrete services which lie within their understanding and capacity to perform. A most important part of the nurses' duty is to plan a definite program or schedule which includes the addition of other services from time to time as their interest and experience grows. One of the simplest of these functions which a lay group may perform is to establish and maintain a loan closet containing necessary supplies for use in the sick room. This is particularly useful for maternity cases when sterilization facilities are not readily available elsewhere in the community. The supplies are also useful for demonstration purposes in classes in home nursing. The greatest value of the loan closet lies in its obvious usefulness, a very effective educational medium to introduce further activity on the part of the citizens in the work of the health center.

Another service which the lay person may perform is to make copies of birth certificates as they are filed, upon attractive forms to be sent to the parents of newborn infants. Mothers who do not receive such a return upon the birth of their children, when the custom has become established, may be depended upon to question why. Although the bulk of such work in any rural community is relatively small, it is nevertheless continuous and emphasizes birth

registration with quiet force. Other services than these will occur to the resourceful nurse, whose aim is the development of a progressive team-thinking, team-action program.

It seems clear that the successful organization and administration of a rural health service for mothers and babies is dependent upon the qualities and leadership, executive ability, mature judgment and high ethical standards in the nurse so engaged. But a nurse so gifted will be unable to harmonize the present conflicting interests between preventive and remedial medicine alone. She must have the active support, encouragement and enthusiasm of the specialists in the field of infant hygiene. In behalf of the rural nurses and the new divisions of child hygiene and public health nursing recently organized in many of our states, who will work in the main in rural communities, the appeal is here made for the enlistment of such service by these experts.

DISCUSSION

Dr. Lydia A. DeVilbiss, U. S. Public Health Service, Washington: The paper which we have just listened to covered a great many points which we might very well bring up for discussion. Miss LaForge begins with the fact that in the rural community the nurse may meet with hostility on the part of the population, and ends with the plea for establishment of co-operation with the medical profession, and I will confine my discussion to that one point.

In our experience we have found doctors in rural communities very busy but we have never yet found any physician who has exhibited any hostility or indifference. If that should arise I think it would be between the difference of conception regarding remediable and curative medicine. It is a fact that most of the doctors know that they have nothing to fear about curative medicine. At first they began the cry that we would put them out of business, but when they once understood that the more public health work is done the more remediable work that should be done is bound to follow, they have been co-operating. We have only the best co-operation among the doctors, in the rural communities as well as elsewhere. There is plenty of work to be done and not enough doctors to do it. Some nurses can do it; whether all can do it or not I do not know.

I was much interested in the description of Kalamazoo County in Michigan. They have surely done a good deal, but I wonder whether that result is permanent. We are finding more and more that we cannot put the work upon a permanent basis unless the physician is put upon a paying basis. I know of no clinic that is paying the doctor the amount that is due him.

I am glad that Miss LaForge brought out the point that bedside nursing

was one of the best points in developing rural work. She also mentioned that one of the things the nurse could do was to send out birth certificates. The only way this could be done would be for the County Health Officer or the nurse to be appointed deputy registrar and report to the state officer.

Miss Jessie L. Marriner, Director, Bureau of Child Hygiene and Public Health Nursing, State Board of Health, Montgomery, Alabama: I have been much interested in this very able paper. In our attempts in Alabama to solve this problem, we have had to ask, "What form shall the rural health center or rural clinic take? Shall it be a remedial clinic, or shall it be an educative clinic confining itself to educative work, or shall we have a combination of the two?" There are a number of things to be considered for each of these three possibilities. The remedial clinic we believe finds most readily, a social and psychological point of contact with the people. The country people know that they need medical attention. They are ready to receive any person's suggestions along that line with open minds. We do not meet with the same response when we go among them to educate them. They are not conscious of their need of being educated. The educative clinic is very much handicapped by the difficulty of securing the sort of super-nurse, or super-social worker who can make it a success. The remedial clinic, as Miss LaForge pointed out, has the difficulty of securing the services of experts. That is a difficulty which must be met, and which we believe can be met through the co-operation of the local medical societies and the state societies. We are inclined to feel at the present time that it is more psychologically sound and socially sound to give the country people a remedial clinic, or a hospital service, or both, before we begin work along educational lines. That is following the historical development of medical service and seems to the country people less like putting the cart before the horse.

Mrs. Ethel Parsons, Director of Bureau of Child Hygiene and Public Health Nursing, State Department of Health, Austin, Texas: I cannot let this opportunity go by without saying a word in defense of the public health nurse and her attitude in regard to bedside care. The leaders of our National Organization for Public Health Nursing stand out very strongly for bedside care as a part of any public health nursing program. Miss Fox, of the American Red Cross, also feels that the nurse who gives bedside care has a stronger influence over her people than she has without it. We are urged to include this in our programs. However, many of our nurses who have gone out into the field recently do not feel so strongly about this as those of us who have been in public health work for many years. The young nurse going out into a county sees the big problem ahead, is confused, and realizes that she cannot give bedside care to every one in the county, and decides that she had better do the school work and other things. The nurses, for the most part, want to give bedside care—I do not think any nurse can go in and see a patient who needs care without feeling she must give it. The public

wants the nurse to do so, and I must say that our strongest opposition, no matter how strongly we feel that this program must be carried out, is from the health officers.

I am perfectly willing to be challenged in that point, but I have done my strongest and best talking in favor of bedside care and they will come back and say, "I need the nurse in my dispensary," "There is other work to do," "It takes too long to give a bed bath to the mother and baby and the time is better spent somewhere else," etc. We say, "If this is the means of getting a family under our health supervision, is it not time well spent?"

With only one nurse in the county we cannot do all we wish to do. When the counties are subdivided into smaller districts, then we will be able to give the bedside care that we realize is valuable and all want to give.

The Chairman: There is nothing like a difference of opinion to develop the truth. From my experience I will say that the problem will never be solved until we can get hearty co-operation. Neither the nurses alone nor the physicians alone can accomplish it. The only means is by co-operation—there cannot be any action in any other way. Has anyone else anything to add to this discussion? Dr. Baker?

Dr. S. Josephine Baker, Director, Bureau of Child Hygiene, Department of Health, New York City: I think we want to get a perfectly clear idea in our minds as to what we mean by public health nursing. I am one of the officials who does not believe that the public health nurse should care for the sick. The reason is that in my experience it has time and time again been proved impossible for a nurse to carry any great amount of work in nursing the sick and at the same time accomplish constructive educational work in educating people in methods of preventing disease. She simply cannot do it. I have looked up the figures of nursing work in one of our large cities where the nurses had five functions—nursing the sick, venereal disease supervision, tuberculosis control, infant welfare work and school medical inspection. They are supposed to spend one-fifth of their time on each of these functions but they spend much more time on the corrective work than on the infant welfare work. We may be tremendously interested in teaching mothers how to take care of well babies but if we have many sick people to care for, we have no surplus time. Sickness must be cared for, it is true. In rural communities, especially, the nurse may find that nearly all of her work is of this type. She must be in the rural community just what the country practitioner is. But when she has taken care of the sick she is likely to think she has done her duty as a public health nurse. In the centers where generalized nursing is being carried out, the infant death rate and the mortality among older children are not being reduced in the same degree as they are in those where the nursing service is of the specialized public health type and devoted to keeping children well. There is a marked difference between teaching the mother to keep her child well and taking care of children after they are sick.

Another point to be considered is the type of work that is expedient. If the community is only educated to the point of supporting visiting nursing of the sick, that is the place to start, but just as soon as you get your money and your public with you, let the nursing of the sick be a separate and distinct thing and devote your time to keeping people well, because I can promise you that in this way you will get what is, after all, the main object of public health nursing—the reduction of the sickness and mortality rates in the community.

Mrs. Mary P. Morgan, Director, Bureau of Child Welfare and Public Health Nursing, State Board of Health, Madison, Wisconsin: I want to come back to Miss LaForge's subject. I think she and most of the others who have discussed it have covered the salient points of the subject of infant welfare clinics organized by nurses. We are all looking for the best means of establishing and maintaining these clinics. There is no doubt that the infant clinics can be conducted successfully by public health nurses. I wish to stress one point, the one I mentioned this morning at the round table of directors of child hygiene divisions, that is: How are we to secure attendance at these clinics and make them permanent projects? I believe it depends largely upon who organizes them. A nurse may go into a community and establish a health station or clinic, or a health officer may go in and do it, but will it be used by the community? My experience in the last few years has convinced me that in order to make a project successful, whatever it be, it must be organized and established by the community itself, so we are urging all the communities in Wisconsin to establish their own health centers. I say to them: "You have a perfectly good public health nurse for whom you are paying. Are you going to use her? How are you going to use her? In order to secure the best service from her you must establish a health station where infant welfare clinics may be held; establish it yourself and thus secure the maximum of service from your public health worker."

Miss LaForge (closing the discussion): I think I can best summarize what has been said by saying that I feel very strongly—I think you all do—that we have not yet approached the place where we can dogmatize about the organization of rural work.

I would like to emphasize the point made by the first speaker, that the relation of the experts and local physicians and public health nurses is the crux of the whole matter; and I should like to appeal to the experts in child hygiene who are here today for their help in trying to assist local physicians to improve the conditions in the country.

We do need, as Dr. Baker has said, a distinct interpretation of what we mean by public health nursing. I think though, that we all agree that if we are going to educate a community, we must have interest and attention, and by giving bedside care we secure attention for our educational program.

There is, however, danger of limiting that service to the sick, and care must be taken that we do not forget the fact that the program is educational, built upon bedside care.

I fully agree with Mrs. Morgan that each community should establish its own health station. Mrs. Morgan is a nurse and Wisconsin is extremely fortunate in having a service such as she is developing for local communities.

TONSIL CAMPAIGN AT THE ROCHESTER DENTAL DISPENSARY

ALBERT D. KAISER, M.D., Rochester, N. Y.

(This paper was illustrated by motion pictures.)

The scarcity of doctors during the war and the almost complete cessation of tonsil operations during the influenza epidemic is largely responsible for the many unoperated children who have diseased tonsils and adenoids. The various hospitals and dispensaries were unable to care for enough of these urgent cases so that at the instigation of a few public spirited citizens funds were made available to undertake this work on a large scale at the Rochester Dental Dispensary. This institution founded by Mr. George Eastman has for four years been doing both prophylactic and repair work on the teeth of most of the school children. A department of oral surgery had been established in connection with the dental department. Children receiving dental treatments or examination were also given a complete oral examination. This department was expanded to take care of these needy cases on the waiting list.

The existing staff of surgeons, pediatricians and anesthesiologists was augmented so that for a period of seven weeks forty operations were performed in a day. These children were kept in the hospital for two days and were safeguarded in every way possible. Out of the fifteen hundred children operated upon there were no deaths nor serious complications. It was generally agreed upon that these were undoubted cases for operation. Each child received a careful physical examination before operation and a detailed history was taken to be used for future examinations. These children are to receive annual examinations so as to determine accurately the effect of the operation.

To conduct this work properly, as the picture will show, co-operation with the various agencies was essential. This was easily obtained and the publicity which the daily press gave to the work greatly aided in accomplishing this task.

The end results of this campaign to give to the poor what the well to do can readily obtain will not be known for several years but if the unfortunate complications of diseased tonsils and

obstructive adenoids are to be avoided operation must be more generally practised where it is indicated.

The object in showing this picture at this meeting is to demonstrate that procedures of this kind which deal with preventive medicine can easily be carried out if the necessary co-operation exists. If many of the preventive procedures which are conceded to be helpful are given to a few it is only reasonable to offer them to all who need them. That is what the city of Rochester is planning to do.

This picture was prepared for publicity purposes and not to show to a group of physicians and nurses. It was not necessary however for when the people learned that a carefully organized campaign was on foot for taking care of these adenoids and tonsils there were three thousand applications instead of the expected fifteen hundred.

(The pictures followed.)

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BREAST FEEDING PROPAGANDA AS APPLIED TO A BIRTH REGISTRATION OF 9,000

REPORT

Prepared for the Committee on Infant Care of the American Child Hygiene
Association

DR. E. J. HUENEKENS, *Chairman*, Minneapolis
MISS MINNIE AHRENS, Chicago
DR. ALAN BROWN, Toronto
DR. ANNA E. RUDE, Washington, D. C.
DR. JOSEPH S. WALL, Washington, D. C.

By NATHALIE C. RUDD, R. N., *Executive Secretary, Infant Welfare Society,*
Minneapolis.

The work of the Breast Feeding Investigation Bureau, organized under Dr. J. P. Sedgwick, Professor of Pediatrics, University of Minnesota, has become well known to all who are interested in the effort to reduce infant mortality. The methods used in this investigation during 1919, were presented last year by Dr. Huenekens for Dr. Sedgwick.

Since the opening of 1920 this work has been taken over as part of the work of the Infant Welfare Society of Minneapolis, and to those who would like to see such work as the fundamental part of organized child welfare work, convinced of its soundness and value—we give here an outline of the methods by which our Society has included in and co-ordinated with its work—the teaching of the value and importance of breast feeding to every “1920” mother; i. e., to the mothers of all babies born during this year in Minneapolis.

The Infant Welfare Society has a staff of 10 nurses on the infant work; two supervisors of prenatal work. Its clinic registration, referring to the infant clinics, in seven stations, is 2,526. Two infant clinics are held weekly in six stations; four in the seventh—total of 16 infant clinics weekly. Four prenatal clinics are held weekly. This involves the usual necessary “home-follow-up” to maintain the continuous contact between the home and the clinic.

In addition to this, the breast-feeding work (twofold in its purpose; 1st, to carry the gospel of breast-feeding to every mother; 2nd, to gather statistics as to the prevalence and duration of breast-feeding among Minneapolis mothers)—this work necessitates the visiting of every newborn baby whose birth report comes to the City Health Department, a second visit to each baby at the end of its second month; and a further following of each baby by circular (and a visit if circular is not answered) until the

baby has passed its ninth month. These circulars, when sent out, are accompanied by a stamped return envelope with card enclosed for answers as to the baby's feeding at that time.

Briefly the method employed is as follows:

- a. Birth list received daily from Health Department.
- b. Permanent cards made out from these lists and distributed to staff nurses by districts.
- c. Schedule: 1st visit to be made at end of 2nd week.
 2nd " " " " " " " " 2nd month.
 3rd contact circular sent at end of 4th month.
 4th " " " " " " " " 6th "
 5th " " " " " " " " 8th "
 6th " " " " after 9th "

All who do not return answers to circulars are visited by the nurses.

Baby name.....Date of birth.....
 AddressTelephone.....
 Is the baby breast fed?.....
 If not, when and why did you stop?.....

 How many children have you had?.....
 Give years of birth 1.....2.....3.....4.....5.....6.....
 Give reason for stopping breast feeding in each case if before ninth month:
 1.....2.....3.....
 4.....5.....6.....

 If you have lost any children, what age and cause?.....

 Date of call 1.....2.....3.....4.....5.....6.....
 Feeding 1.....2.....3.....4.....5.....6.....

Before distribution to the nurses, the following information is filled in from the birth list:

1. Serial number
2. Name
3. Address
4. Doctor or midwife attending
5. Hospital used

The nurse obtains at her first call all other information asked for up to and including "date of first call, and feeding," entering also on back of card any facts of social significance which bear on the case or may in the future. Six spaces are left for information during first nine months.

It is important at the first call to ascertain if there is any trouble in nursing; if there has been trouble with previous children; to allay anxiety of mother as to her possible inability to continue nursing; to impress it

upon her that the surest way to maintain her milk is to evacuate the breasts completely and regularly; and that the effort to save her milk by omitting feedings is the surest way to dry up the supply. If there is evidence that she is not completely utilizing her milk supply at every nursing, to teach her manual "expression": (definition: to "express," grasp the breast firmly with thumb and forefinger, just back of the areola, and, with a motion described as "back—down—out" eject from the gland the remaining milk).

The visits are made by the nurses as part of their regular work. On a day free from clinic, when the nurse starts on her daily round of visiting, she schedules by streets the visits possible to make, including in her list the visits to the newborn, and visits to babies already registered in her clinic; second visits to the 1920 babies, and as the year advances visits on account of unanswered circulars. The only difference is the "point of view" and the record which is made. For the baby visited from the birth list, the record is solely as described above. As soon as the baby comes to the clinic, a regular social and medical chart is started, with the hope and intention of keeping the baby under supervision through its second year.

After the first call is made and entries recorded, the card is returned to the office and filed by serial number. Each nurse has entered these cases in her "breast-feeding book," a small hand book arranged in columns, as follows:

Serial No.	Name	Address	Date Birth	Date 1st call and feeding	Date 2nd call and feeding

A code is used to describe feedings: O—Breast fed
 X—Mixed feedings
 A—Artificial (wholly bottle)
 D—General diet

These books readily show when the second call is due. We feel that this is the most important call, as just at this time we find the mother most liable to discouragement, anxiety, and a prey to the advice of her neighbors. All too frequently she has ceased nursing her baby, convinced that her milk was not the right food.

Report on the second call is made to the office by telephone, the nurse stating that she has a "report on second calls," and giving serial number, date of call, and feeding (by code). The serial number indicates the filing drawer, and the facts are entered on the permanent card as reported, the nurse at the same time checking off her own list. Absolute accuracy here is essential; if the entry is not made permanently in the office at this time, and if the nurse does not check off each reported call, much confusion arises.

In the office a ledger is kept of cases given each nurse (entered before

the cards are distributed, by the serial number, and the nurse's station only) and her returns on these cases are checked off against these numbers also. In this way it is easy to detect unreported calls or overlooked visits.

The subsequent contacts, through the baby's first nine months, if the baby does not come to clinic, are by means of circulars—the first circular sent being a modification of Dr. Sedgwick's circular of last year. These circulars vary, both in text and in make-up from month to month, the better to attract the mother's attention.

See following circulars.

CIRCULAR No. 1

The Importance of Breast Feeding



The Infant Welfare Society of Minneapolis

The knowledge of the importance of breast-feeding in combating infant mortality is rapidly growing in this country. The Department of Pediatrics (children) of the University of Minnesota felt the work so important that it established a Breast-Feeding Investigation Bureau to make a statistical study of Breast-Feeding in Minneapolis and to give any information and help necessary both to the mothers and physicians. This work in the future will be handled by the Infant Welfare Society of Minneapolis, working in close co-operation with and following the procedure outlined by the University Department of Pediatrics (children). This means that one of the nurses of the Infant Welfare Society will visit every home where a birth is reported and will be ready to advise or instruct the mother in the value of breast-feeding for her infant and in the method of stimulating and increasing the flow of milk. In the home where it is felt that such advice or instruction is unnecessary we beg still for co-operation in giving us the information which we need in order to compile the whole story of the babies of Minneapolis, and the relative value of the different methods of feeding.

The medical profession is rapidly recognizing five things:

First, that there is no such thing as mother's milk being bad

for the baby; any other mixture will disagree just as much and the child will have six times less chance of living.

Second, that the nursing of a healthy baby increases the flow of milk until it is "getting enough," and that until that time, a little breast milk with the smallest amount of artificial feeding added to make up the proper amount, determined by weighing the baby before and after nursing will prevent sickness.

Third, that if there is no demand made on the breast, such as nursing or expressing the milk, the supply will disappear. The fundamental requirement for the stimulation and continuation of the milk flow is the complete and regularly repeated evacuation of the breasts. The pernicious practice of dropping a nursing and replacing it with an artificial feeding is one of the most frequent causes of the breast drying up and the loss of milk. The breast is not thereby stimulated; it is, instead, the best method of weaning the infant.

Fourth, that in a premature birth, where the baby is not strong enough to nurse, the life of the child is more often saved by feeding it milk expressed (milked) from the breasts; and at the same time, by the expressing, the flow of the milk is kept up till the baby can nurse naturally later, when it becomes stronger.

Fifth, that the supply of breast milk can be re-established when the baby has been off the breast for some time.

Again it is known that artificially fed babies are much more subject to contagious diseases than those given a start on breast milk. This applies not only to the months when the baby is being actually nursed, but to all the ensuing years. Breast-fed babies develop more resistance for later life.

Statistics could be given which show all of the above points; but statistics are wearisome, and we give you the facts which have been proved by a close comparison and study of thousands of babies.

From the records of the Minneapolis Board of Health for the year 1918, we find that there were 8,689 births for that year. Of these babies 301 did not survive their second week, 100 more did not survive their second month and 628 died in their first year. Looking for some common factor in this large percentage, we find that in the United States, according to locality the death rate is from three to nine times higher among babies who have never been nursed, or, if nursed, only for a short time. Therefore, Maternal Feeding should be the keystone of the propaganda for the prevention of Infant Mortality.

In the year 1918 there were in this city 969 deaths from influenza out of 16,000 cases. This terrible toll was so alarming to the public that every effort of precaution has been taken to safeguard against a repetition. But in the same year, out of 8,689 recorded births, 339 babies were still-born and over 400 died in the first month of life. Should we not put at least as much thought on the prevention of this occurrence especially as science has proved for us that fully one-half of these

CIRCULAR No. 2

Baby's First Summer

Summer is here. It is especially important now that your baby should be kept on the breast. There is much more danger for the bottle-fed baby when the weather is hot.

We wish to make sure again that you have no difficulty with the breast-feeding which can be prevented. We are, therefore, taking the liberty of sending you another card, asking you to answer the questions and return to us. You will be helping in upholding Minneapolis' reputation for the lowest infant mortality rate in the country, by giving us these facts. Minneapolis is taking the lead in this matter of urging and teaching breast-feeding, and we feel that to this is due its high record in baby saving. Help us collect these facts for next year, by answering this card and returning it.

CIRCULAR No. 3

Another Help for the Baby

Now that your baby has passed its first few months the question of weaning and of proper feeding may be troubling you. Remember that the mother's milk is still the best food for your baby. If you cannot afford to consult a Baby Specialist or your own family physician the Infant Welfare Society has many stations in the city where you may get advice on this all important subject. Our object is to help you keep your well baby well.

Will you kindly fill out the enclosed card and return it promptly? Your answer is important; without it we cannot have complete facts on the value of breast-feeding.

We are going to ask you for the last time to let us know how your baby's feeding has progressed. We want to remind you again that this answer will make it possible to know just how long the babies of Minneapolis were fed on the breast. From these facts when gathered we expect to prove to the whole country that breast-feeding is the important factor in the prevention of infant mortality, and the Minneapolis mothers know this.

Remember, too, that if you need advice as to proper feeding, up through the second year of the baby's life, the Infant Welfare Society stands ready to give it to you, if you cannot consult a good physician.

When one of these babies is admitted to clinic, circularization is dropped for that baby and the facts are obtained through the clinic contact. Out of 1,528 admissions to clinic since January, 1920, 1,042 have come to us through the means of these breast-feeding calls.

So much for object and method. As a result we know today, in regard to the 773 babies born in January 1920, that

	At close of January	At close of June
	598 were entirely breast-fed	436 still breast-fed
	28 artificially fed from birth	55 artificially fed
	21 babies died	28 artificially fed from birth
	6 mothers died	28 babies died
Of the	0 refused information	6 mothers died
	8 moved away	1 refused information
remainder	18 cannot be traced	55 moved away
	58 out of town cases	70 cannot be traced
	14 illegitimates not reported	58 out of town cases
	22 stillborn	14 illegitimates not reported
	<hr/> 773	22 stillborn
		<hr/> 773

Similar facts are in process of accumulation for each month of the year.

For expense this work has involved the addition to the staff of two nurses who share in the general work of the infant clinics and home visits, as well as the breast-feeding work. This division of labor is essential to maintaining the interest of the nurse as the endless visiting involved deadens interest unless its fruits are studied from attendance at the growing clinics and the "carrying-on."

We find this staff too small for the work involved. To follow up a birth registration of approximately 9,000 and maintain the desired contact with 2,560 babies in the clinics, requires a staff of at least 16 nurses, each possessing the ability to win confidence, to command respect, and to impress upon the mother the truth and value of her teachings.

Additional office equipment of 18 filing drawers (6 for cross index) has also been necessary. An increase in the budget was also necessary to cover circularization and postage.

The whole time of one clerical assistant is used, this work requiring someone possessing considerable statistical ability and great accuracy in detail. A half time salary is paid to a woman whose efforts are devoted exclusively to getting telephone information from families where we realize that intelligent co-operation may be expected and where means to procure specialist and private nurse precludes the necessity of a nurse's visit. Even in these cases our nurses are frequently sought to teach "expression" and to encourage the mother to renewed effort to maintain her supply of milk. These visits are always made with the consent of the private physician on the case.

Since January our group of 10 nurses have reported 416 mothers to whom they have taught "expression." The stories of a few of our babies will illustrate this point.

Richard E., was born June 18, 1919, weight reported as 6 lbs., 12 oz.

He came to clinic Aug. 5, at the age of 7 weeks, markedly undernourished.

Weight on admission to clinic, 3,330 gms. (7 lbs. 6 oz.).

His feedings on admission were six a day, three breast, and three Borden's Eagle Brand.

Directions were given to nurse every 4 hours, 15 minutes one breast; 5 minutes the other; to express remaining milk, and to give complementary feeding of $\frac{1}{2}$ milk mixture, 5% sugar, 3 oz.

Attended clinic Aug. 8. Weight, 3,440 gms.—p.c. weight (or wght. after nursing) showing increase of 10 gms.

Attended clinic Aug. 19. Weight, 3,545 gms.—p.c. weight (or weight after nursing) showing increase of 20 gms.

Expression was taught again; directions changed to "nurse every 3 hours."

Attended clinic Aug. 26. Weight, 3,615 gms. p.c. weight 70 gms. increase.

"	"	Sept. 5.	"	3,885	"	"	"	95	"	"
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"	"	Sept. 12.	"	4,135	"	"	"	150	"	"
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"	"	Oct. 3.	"	4,970	"	"	"	110	"	"
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Complemental feeding cut down to 1 oz. Directed to "nurse every 4 hours." After October 10, complemental feeding was omitted, his weight being 5,275 gms—11 lbs. 9 $\frac{1}{2}$ oz.

Thomas M., was born April 13, 1920. Weight at birth reported as 9 lbs. 8 oz.

He came to clinic June 17, weight on admission 9 lbs. 11 oz. The baby's history was that he had been breast fed for a few weeks, had colic, mother advised by a neighbor to substitute cow's milk and lime water. As colic continued, mother brought him to clinic.

Directed to nurse every 3 hours, ten minutes each breast. Expression taught. Complemental feeding given, 2 oz., $\frac{1}{2}$ milk mixture, 4% sugar.

Attended clinic June 21, weight 4,455 gms. p.c. 115 gms. increase.

"	"	July 12,	"	5,295	"	"	"	120	"	"
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"	"	Aug. 16.	"	5,940	"	"	"	110	"	"
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Complemental feedings omitted. To nurse every 4 hours.

Some Other Effects of the Work: In January our total clinic attendance was 781. In April it was 1,178; in July, 1,384. The age of the babies being admitted to clinic is on the average much younger than heretofore, 36% being under 2 months, and 62% being under 4 months on admission, of the cases admitted since January. Of the babies under 4 mos. 91.5% were breast-fed on admission. This growth, and the appreciation of the need of early advice as to feeding we attribute directly to the influence of these wide-spread visits, and the teaching that goes hand in hand with them. Formerly the registration at our clinics represented all the mothers whom we had been able to interest in our work. Now we know that far beyond the confines of the clinic room, the teaching of the value of breast-feeding has gone, and that not a mother of a 1920 baby in our city fails to know our principles: 1st, that the mother's milk is best for the baby; 2nd, that every mother can nurse her baby; 3rd, that lactation may be re-established; 4th, that the persistent evacuation of the breasts at regular intervals leads directly to further stimulation.

Included in a work as widespread as this, could well be the gathering of other facts, or the conveying of other teachings, while in the home; and this, if carried out, might go far towards eliminating the duplication of nurses or other visitors in the homes, the castle-like exclusiveness of which is frequently questioned by the public we would serve.

PRE-SCHOOL AGE

COMMITTEE

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Dr. F. H. Lamb, Cincinnati, Ohio
Dr. H. F. McClanahan, Omaha, Nebr.
Dr. Thomas McCleave, Berkeley, Calif.

PROBLEMS AND TREATMENT OF EARLY DENTAL DEFECTS*

J. F. AUSTIN, D. D. S., St. Louis

In presenting this subject for consideration before this convention, I wish to call your attention to the fact that the most neglected part of our great population is the child up to the age of six years. This neglect has been manifested by the horrible condition of the teeth shown by statistics gathered from time to time in our schools when the child's mouth has been first examined by the dentist.

The ignorance and indifference on the part of the public as a whole on this subject is due largely to the dentist. Most dentists find this class of work to be very objectionable and disagreeable, and many of them sidestep when a little patient presents himself for treatment. This, however, does not lie entirely in the hands of the dentist.

The child must necessarily be taken into consideration when the mother finds she is in the state of pregnancy. This is when the mother's duty begins in regard to bringing into this world a healthy child. At this time she should see to it that she is in as nearly a normal condition as possible. It is necessary for her to see her physician with regard to her constitutional derangement, and she should also visit her dentist and have her teeth put in perfect condition. In order to keep her mouth in this normal, healthy condition, a prophylactic treatment each month is also necessary.

When the child is born one of the first things to be done is to see that the mouth of the child is thoroughly cleaned, using a soft cloth and lukewarm water.

* Illustrated by lantern slides prepared by Dr. Thomas B. McCrum, Kansas City, Mo.

ERUPTION OF TEMPORARY TEETH

Central incisors	5 to 8 months
Lateral incisors	7 to 10 months
First molars	12 to 16 months
Cuspids or eye teeth.....	14 to 20 months
Second molars	20 to 32 months
(the lower teeth generally preceding the upper.)	

When the lower teeth start to erupt they should be watched and kept clean, using a soft cloth twice a day; morning, and especially at night before going to bed.

At the age of three the child should be taken to a pedodontist or child specialist in dentistry, who will then care for the teeth. A prophylactic treatment should be given once a month, keeping the teeth and gums in a healthy condition. By so doing, it will prevent 75 to 90 per cent of the decay.

If deciduous teeth are allowed to decay until the pulp is involved, there is only one thing left to do, and that is extract. It is an impossibility to treat these teeth and properly fill the roots, and every time a dentist tries to do it, he places his little patient in a position where he may develop any number of physical or constitutional ailments, which will be very detrimental to his general health; so if we are considering the welfare of our patient, all such teeth should be removed, and then we are certain that focal infection will be eliminated so far as the teeth are concerned. When teeth are extracted early, appliances should be used to hold the space for the permanent teeth to erupt.

The first permanent tooth to erupt is the first molar, which comes in back of the second molar of the temporary set. This tooth erupts at the age of about six years, and in many instances is considered by the parents to be one of the temporary teeth. This is the cause of so many of these first molars being lost.

The dentist should make a special effort to educate the mothers in regard to this first permanent tooth.

Candy, and carbo-hydrates in other forms are the worst enemies of sound teeth, for the reason that the destruction of the teeth by caries is most easily induced by chemical changes in these substances lodged in and about the teeth.

The filling materials used to the best advantage in preserving the deciduous teeth, are copper and silver cement, and amalgam fillings.

In closing, let me emphasize the necessity for the fullest co-operation of every person in this convention, to help educate the mothers of their community with regard to the necessity of preserving their children's teeth. Dentistry for children does necessarily have a great part in the general welfare and health of the child.

Now please remember that a normal healthy mouth is the basis of good health. May we all be inspired to greater efforts in this important cause.

DISCUSSION

The Chairman: As you know, this section of the Association is only about two years old. Last year we heard about the work for children of pre-school age in Scotland and San Francisco, and also the excellent advice given by Dr. Richard Smith. It seemed advisable this year to continue and extend the discussion on the care of the teeth in children of this age.

I don't know how it is with you, but we have the impression at home that the dentists are too busy to work with these deciduous teeth. It is very timely to discuss methods by which we may get our children's teeth preserved and repaired. The paper is now open for discussion.

Dr. Ada E. Schweitzer, Chief, Division of Infant and Child Hygiene, State Board of Health, Indianapolis: In going about over the State of Indiana with our health car we have found a considerable variation in the teeth of the children. Some children are reported to have had teeth at birth, and others to have no teeth at a year or a year and a half. The mothers of the latter class come to us wondering whether the children are ever going to have teeth. Of course they do have them in time. We find some children with very poor teeth, others with teeth in perfect condition, with perfect occlusion and contour. We find many mothers who look carefully after the health of the children's teeth, and many others who are seeking more knowledge on this subject. Many do not know which molars are deciduous and give no care to the temporary teeth. We find a considerable amount of caries in the temporary teeth of children, and in many cases gum abscesses from which pus is oozing. When we tell them that the too early pulling of temporary teeth deforms the jaw they are much surprised, but the number of mothers who are interested in the temporary teeth is increasing. I think this is partly due to the literature that has been distributed over the State of Indiana, and partly to the work the dentists are doing. Many of our Indiana dentists are doing good work for children. Some say

this work should not be done, but they are in the minority. The State Dental Society has gone on record approving the work for children and has requested the dentists to accept such work and do it to the best of their ability. In some places we find the dentists take the initiative and on request of authorities take charge of the work of the school children.

The pre-school children are neglected, as we have said. We give talks with moving pictures and lantern slides that illustrate some of the points, and we always say that if the parents and the grandmothers would pay as much attention to the eruption of the later teeth as they do to the baby's first tooth, it would be of great assistance.

Dr. John A. Foote, Washington: Dr. Austin has called attention to many aspects of the question in his paper, but the medical men are inclined, I think, to consider the teeth not from the orthodontic standpoint but as a source of focal infections. We tend to classify abnormal conditions of the teeth either as infectious or those due to infections. And yet mechanical defects of the teeth of course have a marked effect on the health, as has been shown, and a large number of these in turn are due to nutritional disorders. While the physicians consider the teeth as potential sources of intoxication it is easy to see that the dentists place some emphasis upon the other side—the preventive side. There is a reason for this, since we are inclined to see best what we know best. It is a fact that those of us who are doing clinical work know that even in very young children we do have infectious conditions around the children's teeth. It is not uncommon to see pyorrhea and abscesses, and these are a frequent cause for fever. In fever for which we can find no other cause, the teeth will frequently have pus at the roots. As a cause of infection of the tonsils, there is no question but that an infected condition of the teeth or gums may have a great influence.

In the question of proper diet, the effect of rickets, and the influence of such diseases as syphilis on the future development of the teeth, we have a tremendous field for investigation and correction. From both the medical point of view as well as the orthodontic, there is still an enormous amount of work to be done by both physicians and dentists in devising and teaching dietetics and mechanical measures for the better prevention of dental defects.

Dr. Wm. Palmer Lucas, San Francisco: I want to emphasize what Dr. Foote has said and make a plea for children's clinics throughout the country. There should be dental chairs along with the medical clinics. That is the only way, it seems to me, that we can get a complete study from the dental point of view and the pediatric side as well. We had a dental school on the same floor as our pediatric department but found this unsatisfactory, and have come to the conclusion that the only way to do is to put a chair right in the pediatric clinic, where the dentist makes the examination and the suggestions, and does the minor cleaning and the minor filling. Then if there is any major work to be done the case is referred. It seems to me that in

this way we will get a very close co-ordination between the dental point of view, which is more or less a hygienic point of view, and the pediatric point of view, which is more hereditary plus nutritional. There is no question but that certain families have a weakness in the formation of their teeth. You will find entire families in which there will be more difficulty on any diet than there is in other families. What is the reason? Combined study, it seems to me, is the only way through which we will get the proper point of view.

Dr. Charles Hendee Smith, New York, N. Y.: I only wish to corroborate what Dr. Lucas has said. The only way is to have the dentist right on the job. In the last six months we have had the dentist in one of the rooms of the children's clinic and the work has improved greatly.

Dr. E. V. Brumbaugh, Deputy Commissioner of Health, Milwaukee: The question of the teeth of the children who do not go to clinics, whose parents are able to give them all care, is also very important. As a rule people of this class are very intelligent and recognize the need of dental care for their children, and yet when our social workers, after having spent a great deal of time on this question, see that the children are taken to the dentists, the dentist frequently says that there is nothing to be done as the teeth are beyond care. There is a wide divergence between our teaching and that of the private practising dentists. Either our advice is wrong or the teaching these dentists are giving the families is wrong. If it is a fact that the teeth cannot be cared for, we should know it and stop telling people that they can. If they can be properly cared for it is up to the dentists to do this work and spread the news through the land.

Dr. Taliaferro Clark, U. S. Public Health Service, Washington: In the course of my study of the defects among children I became impressed with the occurrence of dental defects in the school children in such overwhelming numbers, which in the aggregate outnumbered all other defects combined. As a result of our investigations, the U. S. Public Health Service has organized a mobile school dental clinic which has been sent into a number of states to investigate child mouth hygiene problems on a state-wide basis, to organize school dental clinics wherever possible and to bring about closer co-operation by the state health and educational authorities. The state of North Carolina, I think, is doing more than any other state in the union for its children. The State Board of Health is making a complete examination of every school child in the state, is establishing dental clinics and doing other excellent health work. I was much impressed by the paper just presented and wish to congratulate the program committee on selecting this subject and emphasizing its importance. We cannot begin too soon to recognize dental defects in children and correct them. Carrying out the thought suggested by Dr. Lucas, we should begin before the child is born, and educate expectant mothers to know that the quality of the food they eat largely determines the tendency of the child to develop sound or unsound teeth. The

expectant mothers should eat food containing phosphorous and lime, and articles of diet rich in the accessory food factors. The absence of these factors in the habitual diet is followed by the development of rickets and scurvy, disorders associated with bad mouth conditions.

Then again, there is the importance of the treatment of dental defects. For this the younger the child the better. For instance, Dr. Austin has shown you on the slides the process of the eruption of teeth and the results of the decay of the deciduous teeth before the permanent teeth are erupted. In Bridgeport, Connecticut, where great attention is being paid to the correction and prevention of dental defects in the school children, it is reported that this work has caused great improvement in the progress of the children in school work. Despite improved facilities which may have been responsible in large measure for the improved progress of the children in school, I am quite convinced that the child with rotting teeth is in no condition to do satisfactory school work, and that adequate dental attention places him in better position to take advantage of educational opportunity.

One other point which I wish to bring out is this: It is probably a waste of time and an unnecessary expense to expect the dentist to attend to the deciduous teeth. I am convinced that the employment of mouth hygienists will solve this problem. I think it is more economical in the school to employ mouth hygienists to prevent than to use more radical methods later to correct dental defects after they arise.

In Delaware we have just obtained a contribution of \$20,000 to establish dental clinics in that State.

In West Virginia the Service Unit secured the establishment or the promise of the establishment of approximately 14 school dental clinics and since the opening of the school year has secured the promise of the organization of a school dental clinic in nearly every city visited by the unit in the State of Tennessee. Many other states are recognizing the value of this form of health supervision and are authorizing the establishment of bureaus and divisions of oral hygiene in their health departments and enacting laws permitting women to practice mouth hygiene.

Dr. Lafon Jones, Department of Child Welfare, Board of Health, Flint, Michigan: In my connection with the municipal health center in Flint we were early impressed with the importance of dental defects in connection with the constitutional diseases of childhood, and also with the difficulty of getting these defects properly cared for. There are not enough dentists in the world to take care of the defects, and only a very small percentage of the dentists who are practising are willing or competent to give the proper sort of care to the children. In Flint we have gotten around this by something which I think is unique. The Genesee County Dental Society has requested the health department to offer dental work to 100 per cent of the children, regardless of their financial condition. We have five full time dentists and have reached a point where we refuse to do anything in other clinics for the child with a septic mouth. We insist that the children in the

open air rooms have their teeth put in good condition, or we will use the space in these rooms, where so many of these children are, for the child who will co-operate. We have noticed a very remarkable improvement, not only in the condition of the mouths of these children but in the physical condition of the children as a whole, as well.

Dr. Austin, (closing the discussion): I am very sorry to say that the general impression regarding the members of my profession is correct—most of them do not care to work for children. There is nothing so hard on a man in the general practice of dentistry as to have to work for a child three or four years old. In the first place, the dentists are not equipped to work for children of that age and in many instances when the parent brings the child to the dentist to have a deciduous tooth taken care of they expect the dentist to work for just about a third of what they would charge for working on an adult. Therefore, dentists sidestep children's work, as I stated in my paper. They not only will not do this work themselves, but they refuse many times to send the patient where they could get the best service. I have had many people come into my office with children whose teeth are in a deplorable condition. The first thing I do is to jump on the parents for allowing the children to get in that condition. The parents usually say that it is not their fault; that they have taken the child to their family dentist and have been told that nothing can be done. They say that the teeth are only temporary and that they should let them alone; they will soon leave them and the permanent teeth will take their place. That is what we are up against. The dentist will not do his duty toward the child in the great majority of instances.

The abnormal eruption does not occur very often, but I have records of children who have been born with teeth, as well as cases where the teeth are late in erupting. As far as lateness in erupting is concerned, I do not think that hurts the child.

Focal infection was spoken of and this is the main thing in the treatment of deciduous teeth. The dentists make the mistake of attempting to fill the roots of these deciduous teeth when it is an impossibility. It cannot be done. You can understand if you will think for a minute, that when that root begins to absorb, the end of the foramen in the root is sometimes as large as the end of a lead pencil and if you try to treat the root you may get it sterile, but when you start to put in the filling you push the gutta percha point down in the issues which will cause an irritation and an abscess will form—probably a blind abscess, so that there is no way in which you can tell that there is any trouble unless you take a radiograph. The infection gets into the blood and through the system of the child and there is no telling what may be caused by such an infection. There are a great many cases of arthritis in children with deciduous teeth which had been treated and properly filled, as they thought, but which give the child trouble and if the teeth are removed within a week or two the trouble will all clear up. Never try to treat a deciduous tooth. If a child shows caries which involves

the pulp, I tell the parents the tooth must come out, and then I put in my little appliance so that there is no atrophy of the tissues and in that way we preserve the space for the permanent tooth.

As to hereditary results and ravages of decay in families, you sometimes find this true, but in other cases you find families where all drink the same water and have the same food and environment, yet some of the children's teeth will be in a horrible condition and other children will have perfectly healthy teeth with no trouble at all. I would like to have somebody explain to me the cause.

It is true that clinics have done a great deal for the children after they reach the school age. We have a clinic here under the charge of Dr. D'Oench at the Central High School, and they are doing great work and treating many children every year. I believe in time the dental hygienists will have their place in every state in the Union. We are trying now to have a law passed so that we can use dental hygienists. Up to this time we have no law that will permit us to use them, but as has been pointed out the dental hygienists can help us out greatly with the children, especially in the preschool age. We have patients who come to our office with children who have an absolutely normal mouth, the teeth and the mouth in perfect condition, and when you explain the necessity to them for keeping the mouth healthy, they are willing to place the child under your care. By seeing the child every month, watching the teeth, keeping them perfectly cleansed, and teaching the child how to use a toothbrush and keep the teeth clean between these examinations, we can eliminate 75 to 90 per cent of the decay. I believe people are beginning to realize that temporary teeth are of as much importance to the child as are the permanent teeth to the older people. I think that in time, by means of such work, we will have the people educated so that they will care for the children's teeth and eliminate a great many constitutional ailments which come from the neglect of these teeth.

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THE MENTAL HEALTH OF THE CHILD, SOME PHYSICAL DETERMINANTS AND A METHOD OF OBSERVATION

C. EDGERTON CARTER, M.D., Los Angeles*

In connection with my pediatric work at the Orthopedic Hospital School of Los Angeles the interdependence of the mental and physical has loomed so large it has seemed worth while to emphasize this relation as a factor in the mental health of the child. Of course the general consideration of "mens sana in sano corpore" needs no stressing; in a vague way we are all conscious of that relation. It is to impress the direct causative factor that abnormal physical conditions may have specifically upon the child's mental hygiene that the subject is discussed from this physical angle.

The great difference in the treatment of crippled chronics who exhibit biased mentality and the child of normal mentality with "inclinations" toward physical defect, is that of conservation. In the chronic cripples marvelous reconstructive work is done but at best it is reparative. In the mentally normal, the future possibilities are so much greater, that eventually we shall have "Preventive and Corrective Clinics" for the pre-school child as we now have medical and surgical clinics for the afflicted. One such clinic under the management of the Federation of the Parent Teacher's Association in Los Angeles has made a modest beginning. Its purpose has been to give the supposedly well child of pre-school age from two to six years an opportunity to become a superior child. Instead of attempting to restore to possibly normal the ill or defective child—we start with the apparently normal and endeavor to give him endurance and robustness which are requisite for superior attainment. Incidentally, we find more than three-quarters of the children examined reveal varying abnormalities of more or less consequence. Naturally these defects are corrected. So the clinic proves corrective as well as educative. But the crux of the problem lies in the attempt that is made to better the average—to surpass the "fairly well" standard of the present and to inspire parents

* In the unavoidable absence of the author, this paper was read by Dr. John A. Foote.

and children toward being (and doing) better. The returns noted in this clinic already have vindicated its need. And the conviction that correction of chronic physical defects liberates new mental force, has caused the Orthopedic Hospital-School in Los Angeles to materialize for the explicit purpose of training these resultant mental abilities coincidentally with treatment, often tedious, which the child's crippled condition demands.

A Health-Status Chart in use at the clinic will be explained at the close of this paper, as a method of proving its practical adaptation in presenting the physical findings to the parents. Children who upon superficial examination impress one as being sound physically are found not uncommonly to reveal a health status from 60 per cent to 75 per cent normal when charted upon the basis of values. These charted values are arbitrary and may be modified to meet individual conditions as Dr. Goetz has done in Santa Barbara, and as with the private patients of the writer. The one requisite is that of emphasizing health essentials.

So largely is preventive work in children a question of parental education, and so impossible of enforcement are personal health measures that mental hygiene to be applied must have a practical elemental basis appealing to the comprehension of the parents. For this reason, approaching the subject through the medium of the physical defects and disorders, concerning which the parent has an intimate knowledge, one finds a welcome avenue to a fertile field. It matters little whether the parent completely comprehends the reflex processes by which results are obtained upon mind and character through these physical determinants. The vital fact is that there is this intimate association and that the intangible can be reached through the tangible. Thus the parent comes to realize that improvement may be accomplished upon temperament and ability, specifically through these physical health measures; *e. g.*, tonsils have long been enucleated for the relief of septic absorption and because of their deleterious effect upon the blood stream and general metabolism—little argument is needed on that score—but that abnormal tonsils should be removed to *prevent* cardiac involvement is a step farther and is usually accomplished because of the parents' confidence in the physician rather than from being convinced of any real danger. The third step in the argument for the

removal of pathological conditions or for the correction of defects, viz.: *that the child's mental development will show definite response* to such treatment, requires for a convincing presentation, not only the enthusiasm of the believer but knowledge of actual experience.

A practical method of physical examination whereby comparisons of conditions may be appreciated at a glance, is a necessary corollary, for parents readily bridge the gap between the physical status and its possible effects upon mind and disposition, *provided they can be convinced that the child's condition is sub-normal*. Here *graphic* charts serve an essential purpose in this educational step since the physician is thus enabled to translate his findings to the visible scale which represents the condition with reasonable accuracy.

Heredity: Perhaps upon no other claim has there been laid greater burden of proof than that of heredity! Parents too early are satisfied to let Jimmie be thin because his father is, to permit Mary to refuse vegetables because mother does; to tolerate an irritable nervous child because he is "high strung," etc., while the possible inheritance of value from the parent, the character impress made by daily example, is given little thought. It is so much easier to fall back upon the hackneyed excuse "he inherits that from his father." ("Poor Father!")

If as a parent one delves into the study of "inherited traits," one finds that "acquired characteristics" are buffeted about, confused in experimental proof with "mutilations;" that the influence of "throwbacks" (or primitive reversions) is often ignored in the reckoning; that the power of environment is underestimated until one is in a quandary at each last analysis and uncertain as to what constitutes a working basis. Undoubtedly we reflect our own uncertain attitude when we fail to urge upon the child the acquirement of a taste for all wholesome foods and healthful games. In nourishment for the growing body as in knowledge for the growing mind, "such stuff as dreams are made of" will not furnish a healthy basis for future expansion. Homely, simple food for body and mind must form the foundation of any stability in health or character. Yet so much in our likes and dislikes is explained upon the basis of "heredity" that unconsciously we allow our children to form pernicious tastes in the choice of food and in the formation of habits.

Instead of the child "inheriting" a dislike, he acquires a *fixed antipathy through the daily imitation of a parent lacking control* and wholly unaware of thus influencing the tastes and through them the growth of the child. Often these food impressions are left to the haphazard choice of a nursemaid abetted by the whims of a difficult-to-please child.

It is bad enough to have our children acquire their accent from nursemaids whose nasal or strident tones leave an indelible stamp upon the speech of their runabout charges—that is unfortunate and a handicap. The maturing mind in after years seeks to cast off these acquired peculiarities (alas often unsuccessfully) but *food dislikes*, idiosyncracies in eating are even more vital and *may be the direct and only cause* of nutritional disturbances resulting in rickets, flat foot, bony deformities and other developmental defects. Here the psychology of the mother (assuming that she has the intimate charge of the child) affects the physiology and growth of the child; this in turn gives an undeniable twist to the outlook on life of the child and may figure in the distorted philosophy which the resulting adult so easily acquires. The kingdom that was lost "all for the want of a horse shoe nail" does not compare to the myriads who never glimpse their kingdom because of reasons seemingly as insignificant. One of the old established and influential religious orders is credited with the dogma that given a religious training until seven years old the child will never depart therefrom. In no other instance apparently do we find a well recognized and accepted working hypothesis that takes into account this pre-school period as a possible determiner of the child's future.

It is a period nevertheless, in which *imitation* of conduct, temperament and habits hold supreme sway. Reason and decision not yet formed—imitation and imagination are dominant. The influence that health has upon mentality and habit upon health is not appreciated. If it were, the pre-school child in the family of high ideals would not be permitted to "drift" into a haphazard physical condition as he is today. He would receive at least as much routine attention as does the family automobile, toward keeping his combustion perfect and his "machinery" in order.

In other ways than by diet, however, can the child's mental growth be encouraged. Right physical hygiene fosters healthy mental hygiene. The influence of carriage upon conduct, of pos-

ture upon principle, is too well known to need more than passing mention. "Poor bodily mechanics," quoted by Fritz Talbot and Lloyd T. Brown of Boston are responsible in great measure for at least three abnormal physical conditions. These in turn act as nerve irritants and affect the mental horizon. Concrete illustrations of physical determinants upon mental health are found in the commoner health problems. Among these producing a direct effect upon the adolescent outlook consider first a simple surgical procedure that is best performed during infancy or childhood; *e. g.*, circumcision in the male. This should be universal, not alone as protection against irritation and possible later infection but in the nervous child a *scientific* operation is an effective means of aiding his mental equilibrium. Habitual apprehension of the future, as well as timidity and senseless fears exhibited in the child's daily life are not infrequently the result of physical reflexes. Eye-strain, phimosis, anemia, intestinal toxemia are common contributors. Freeing the clitoris in the female often allays irritation and should also be routine in infancy. Bernard Shaw's satire on specific surgery makes one hesitate to assert that tonsillectomy in the child from three to six years as a practically routine procedure would save countless lives from sporadic and epidemic infections, however, when one conscientiously observes the multitude of adults who after dragging through half their lives are finally rejuvenated by parting with a cryptic tonsil or hidden source of sepsis—he finds it hard to defend any tonsil under the least suspicion. Furthermore, the death rate from heart disease receives its greatest impetus from infected tonsils of pre-adolescent years. Kerley has data revealing the ages from five to twelve to be the period of greatest susceptibility. This is a consideration against the doubtful tonsil upon which not enough emphasis is given. As physicians assuming the care of children we have been caught napping because we have no habitual method of checking up the supposedly well child. Our observations are usually made after the heart damage is done! Adenoid and tonsillar hypertrophy or infection, are so commonly noted among school children as a cause of retarded mentality that they need be merely mentioned as obvious physical determinants in the child's mental health.

Physical defects: Perhaps the commonest and least considered physical cause for defect in character development, is found

in the ubiquitous "flat foot" or broken down arches of the foot. Indeed it is doubtful if in our psycho-analyses we ever give "flat foot" a thought, as being a possible factor in establishing the child's mental hygiene. Analyze for a moment the component elements of character and we find "application" or "stick-to-itiveness" a *sine qua non* in all well balanced minds. This is a quality implying the ability for persistent effort. Let the child find that standing tires him, that long tramps over the hills leave him exhausted and without appetite, that tennis makes his back ache, that skating causes his feet to pain him and we soon have that child losing interest in these physical efforts, yet by such physical efforts demanding skill, strength and endurance, are bodies made symmetrical and minds trained to co-ordinate. In a word this is true—the boy who doesn't enjoy out-of-door contests, loses the greatest possible stimulant to clean character building. He is handicapped by this loss of mental training in perception, comprehension, courage and co-ordination which contests give. Weak arches are directly responsible for many molly-coddles in boys and girls. The condition of constitutional asthenia to which Dr. Thomas Lewis has applied the term "effort syndrome," and which Kerley pertinately says permits of "poor student material, 50 per cent of which should be scrapped and put to productive occupation"—is not always found in inherited weaklings. Physical handicaps may be their mental retardants, and in many cases these are conditions which are preventable only during the early formative years.

Again, while nature starts us forth physically equipped with heads asymmetrical, legs unequal, ears imperfect and eyes astigmatic—not all such stigmata have an appreciable effect upon character. In fact every normal man like every healthy dog has several "fleas" of degeneration to keep him humble and to make him hustle. But too many fleas like too much degeneration in the child make training difficult. However, one common anatomical fault leaves its mental mark because of the intimate association that necessarily lies between breathing and effort. Without argument we all agree that courage and control are desirable qualities to cultivate in the budding mind, yet the boy with ineffectively approximating jaws, with teeth failing to function because of malocclusion is barred by reason of this defect from a fair chance in the game of life. His utmost physical efforts are made unnecessarily difficult. Observe

him whose teeth do not effectively approximate and you will find that he does not excel in feats which demand the clenched jaw of determination "to do or die." However, malocclusion receives attention only because of its influence upon mastication or for cosmetic effect. It deserves a more serious consideration for an "Andy Gump" type of facial contour is not to be chosen as winner in any endurance contest, physical or mental; while a man with the vise-like jaws of Roosevelt carries no handicap during the formative years of childhood as he clicks them together in friendly rivalry or determined effort to overcome. Children with the undeveloped lower jaw have been needlessly handicapped by adenoids or dental malocclusion and their mental training is made easier if these physical deformities be corrected.

Opportunity for giving a national uplift to the health of the future is apparently at hand. Statistics of the draft examinations in the United States revealing the now well known rejection for physical defect of every third young man under thirty-one years, have proven most unexpected food for thought. Permit the briefest possible reference. Our athletes have beaten the world, mortality and morbidity rates have shown amazing decrease in diphtheria and typhoid, resources have seemed exhaustless—until we had taken it for granted that to be "a young American" was equivalent to winning "the three score and ten" lease on life! Cold statistics convince us there is on the contrary a lien on the lease, which will either seriously embarrass the life activities, or stop them altogether, in a million men supposedly of the nation's strength. How does this directly relate to the child's mental hygiene? Physical handicaps are to be prevented only by educational influences wisely and constructively utilized among our children. The five groups of defects or diseases, constituting over three-fourths of the million rejected, fall within the limits of diseases preventable or possibly correctable *if seen early*. These same conditions are incurable if advanced. It is to *the effect upon the reconstructed lives* which children so afflicted must form, to *the influence these abnormalities have upon mentality*, that present emphasis is laid.

1. *Heart disease* heads the list, is not curable and so ranks as a physical determinant on future efficiency. To treat this as a physical problem merely, without a consideration of the mental warp

and fear-psychoses the confirmed cardiacs exhibit, is to beg the question. The prevention of heart disease is emphatically a problem of childhood but the burden of its weight is distributed throughout the years that remain, be they few or many.

2. *Tuberculosis*, with its roster claiming distinguished and brilliant minds the world over shows its prevalence in the war data, when every tenth man or over 100,000 of the flower of our youth was afflicted with the disease in active process. If we read R. T. Morris' "Microbes and Men," we are amazed that genius is only such in certain instances, because of toxin; that Robert Louis Stevenson wrote his best only during tubercular exacerbations; that Mozart, Shelly, Napoleon and others were inspired by tubercular toxins. Even to the lay mind, memories of little Beth, "the angel child," slowly fading away with the Great White Plague, impress us with the sweetness of disposition and clearness of vision which not infrequently accompany T. B. infections. Whether this is in compensation for, or because of, this specific disease, is beyond the question. The point in preventive work is that infection begins in childhood, has already decimated the health ranks of our young men and even though the mental impress may be exhilarating and stimulating instead of depressing and fear inspiring as in chronic cardiacs, both diseases are factors in the mental outlook and the pre-school age should be the time for their consideration and prevention.

3. *Nutritional disorders* per se with their sequelæ of bony distortions and developmental defects, claimed another third of our rejected young men. A third of a million youths, whose fundamental nutrition was defective, proves we have much to teach (perhaps to learn) about elemental body requirements and food balance. These deficiencies in nutrition are from ignorance not poverty and Hindhede's observations upon the blockade in Denmark during which the mortality decreased 34 per cent, are revolutionary. He says, "it would seem then that the principal cause of death lies in food and drink. The people must first have bread, potatoes and cabbage in sufficient quantity and then some milk." He further says, "if central Europe had adopted this plan there would have been no starvation or malnutrition." Chapin's article on nutrition in the *Journal of the American Medical Association*, of August 7, 1920, is most timely and points the way to the pediatricist's pos-

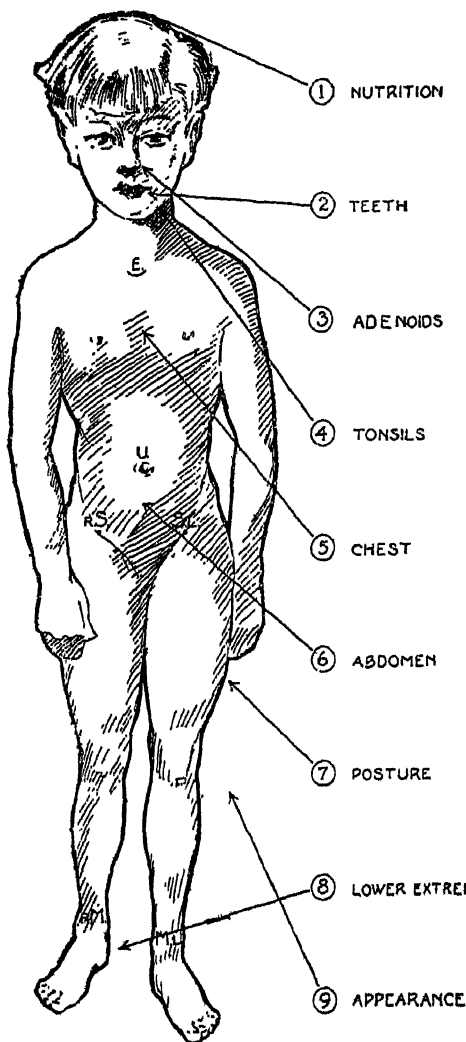
sible influence upon the national welfare. Children with chronic indigestion or constipation, or with faulty bodily hygiene are not the ones who radiate happiness. It is furthermore impossible for a child to develop a happy outlook upon life, who doesn't habitually feel well and the habit of being well carries with it the possible habit effects upon mental and moral quantities or qualities. It is not at all uncommon for the pediatricist to encounter children of six or seven years who complain of "the hardness of life"—whose brows are already wrinkled in *habitual* brooding and whose mental attitude is *habitually* apprehensive. These children are not defectives nor are they normal children suffering from the occasional upset which is part of childhood, but are already "chronics" and as surely growing up into social agitators and fault finders, disgruntled with themselves and their associates, as are the border line cases and degenerates, productive of morons and criminals. The latter classes are congenital and a problem set apart, but the embryo pessimist is not one decreed by Fate nor does he become that from choice but rather because of a wrong habit-hygiene, moulding his psychology, his habitual attitude toward the world. Truly in childhood bread and brains are partners and the child with unbalanced diet cannot be an apt pupil in mental hygiene. It is unnecessary to note further correlations. Progress in glandular therapy is daily making therapeutic history. It is not inconceivable that blood analysis eventually will enable us to estimate what hormone is out of balance. Certainly in groups designated as cretinoid and epileptoid great strides already have been made and in glandular dyscrasia a physiological basis is commonly found for the mental aberrations. Indeed so great is this factor in the correlation of mind and body function that the writer hopes to present some of the practical applications at a later date.

If in this present discussion there is suggested a means whereby the pre-school child may be "dry-docked" every three or six months, from two to seven years of age, and freed from the barnacles that retard his mental progress, ultimate good will come in far greater measure than physical findings indicate.

The health-status chart which in its essential features furnishes the working basis for these physical and mental health tests, is quickly explained. A reproduction of the chart follows:

PHYSICAL EXAMINATION, HEALTH-STATUS CHART

KEY: Open Spaces=Danger. Solid Colors=Health.
N. B. For shorter exam. check first and last in each section.



E. E U U RS SL
TS TS TS TS TS TS
RS SL RS SL NM M
174 174 174 174 174 174

⑩ SYMPTOMS

- 1 Height over average.
- 2 Height under average.
- 3 Hygiene of clothing.
- 4 Weight over average.
- 5 Weight under average.
- 6 Number erupted.
- 7 Decayed.
- 8 Malocclusion.
- 9 Pathognomonic.
- 10 Hygiene.
- 11 Head colds.
- 12 Deaf.
- 13 Mentally dulled.
- 14 Eustachia.
- 15 Von Pirquet positive.
- 16 Sore throat attacks.
- 17 Septic absorption.
- 18 Arthritis involvement.
- 19 Nephritic involvement (Urisae).
- 20 Cardiac involvement (Organic).
- 21 Chest circumference and expansion.
- 22 Rachitic.
- 23 Glands enlarged (neck-thyroid) X-Ray.
- 24 Heart rapid or irregular (Functional).
- 25 Lungs (Sputum).
- 26 Appendix tender at (McBurney's, Morris').
- 27 Distended (gas).
- 28 Pylidulous (atonic).
- 29 Hernia (structurally weak).
- 30 Genitalia and Rectum (Master's).
- 31 Head position (rigidity-asyneia).
- 32 Head circumference.
- 33 Body type.
- 34 Attitude standing-sitting.
- 35 Bony measurements, supine (see record).
- 36 Feet-valgus, varus, cavus.
- 37 Leg-knock, bow, enlarged joint.
- 38 Gait.
- 39 Reflexes (Wassermann).
- 40 Corrective treatment.
- 41 Color (Haemoglobin%) (Blood picture).
- 42 Skin-matonic, occluded, vaccination.
- 43 Temperament. Neurotic.
- 44 Consequent (Stigmata (Status Lymphaticus)).
- 45 Temperatures.
- 46 Stools.
- 47 Sleep.
- 48 Appetite Tongue.
- 49 Open air daily .. . hrs.
- 50 Complaints.

HEALTH

LARYNGOLOGY

PNEUMONOLGY

ROENTGENOLOGY

ENTOMOLOGY

OSTEOLGY

ORTHOPEDY

NEUROLOGY

ENTOMOLOGY

(Reproduced by permission, from the Bulletin of the California State Board of Health, June, 1920.)

The chart is arranged under ten headings, one of which—the last—is symptomatic. Each heading has five points totaling 10 per cent, or 2 per cent to each point, by means of which in summing up the ten headings 100

per cent is secured. Thus the complete physical examination covers some fifty points or "angles." On account of the printed form and arrangement this rather complete examination can be expeditiously made and recorded, but for a "checking up" less detailed, though still general and protective in its scope, the chart is so arranged that by testing the child on the first and last point under each of the ten headings only 20 points are covered instead of 50, yet these points give a fairly comprehensive summary of the health status in shorter time. Under this less detailed physical charting each point naturally stands for 5 per cent instead of 2 per cent as in the more complete picture.

The general scheme of the chart is in three divisions. At the left, under "Physical Examination," is a body outline by which the child (if he be far enough advanced) may see his weak points located and become interested in overcoming them. Next are parallel vertical lines subdivided so that the defects and abnormalities are identified by gaps, or breaks in continuity of color, for the ready comprehension and co-operation of the parent. Improvements noted in subsequent examinations may be filled in with different colors corresponding to the particular date at which correction of a specific defect has been secured or which improvement in abnormal conditions has been observed. This color elaboration may or may not be used and is of course a nonessential refinement. Finally, at the right are the specific points covered in the examination and are for the physician's benefit to enable him systematically to cover the subject from various angles. A careful inspection of any child demands that we have data upon the specific points enumerated at least, and by so grouping the results of our tests a ready reference is instantly available and valuable for future deductions. At the extreme right is a list for jotting down the name of consultants in the various branches specified. All of the arrangements are purely arbitrary but have proved time savers and systematizers.

Under "Nutritional Disturbances"—headings 1 and 9 on chart—are the direct observations of insufficient stature or weight, or both, as well as the hygiene of clothing. Also are included the abnormalities of skin and blood with secondary results producing many of the neuroses; the temperature, stigmata and finally the child's disposition and attitude towards his environment, summed up under "Temperament."

The second subjective grouping comprises by far the larger and more important group of focal infections, charted under heading numbers 2, 3, 4, 5 and first half of 6. Here the primary conditions of teeth, adenoids and tonsils are grouped, plus the secondary infections of chest and abdomen, emphasizing heart and lung involvement, kidney and intestinal tract.

Under the third subject are grouped postural and structural defects with heading numbers last half of 6, also 7 and 8. Here the structural defects of hernia and abnormalities of genitalia and rectum are included. Faulty body positions which children at the imitative and imaginative age so easily acquire naturally fall under "Posture." Eyestrain is here placed because the abnormal head or shoulder position is the first symptom attracting attention of the examiner to eye complications. The common defects of the feet and legs, degenerative changes as indicated by abnormal reflexes or locomotion; and positive Wassermann are included under "Lower Extremities." Common symptoms relative to temperature, bowel activity, sleep and appetite are grouped at the bottom of the column together. This, with a record of hours spent in the open air and the child's "Complaint" completes the analysis with heading number 10.

The examination as recorded in the practical every-day routine is made in sequence from 1 to 50 of the points specified, beginning with the general

inspection while gaining the child's confidence. It is perhaps needless to add that the office nurse can readily learn to plot details of the examination.

This chart method brings an observable result by no means to be ignored in these days of changing creeds and shifting public opinion in the realization of a better understanding between patient, parent and physician. One of the far reaching results of these periodical examinations, aside from the educational value to the parent and child, is that of continued friendly relation between patient and physician. Only with such a relation are we in a position to offer our services or to bring into the problem consultation at a time when the "ounce of prevention" can most avail; in fact, the understanding between the parent and the pediatricist will perhaps ultimately evolve into an agreement covering years instead of from day to day as at present in order that the physician may give directions when he ought and as he ought. Thus, with systematic, periodic examinations covering the neglected period from two to six years the health status of the child assumes a clear prospective and intelligent efforts may be made towards checking preventable disease as well as establishing normal and desirable health habits during the formative years.

DISCUSSION

Dr. Frank C. Neff, Kansas City, Mo.: Dr. Carter's paper is interesting in that it takes up the matter from a very accessible standpoint; that is, many mental defects may be corrected by improving the physical status of the child. We are apt to assume that the child's mental health is taken care of in the public schools, but here we are dealing with the child before it gets into the public school. The public school child may have its intelligence measured and his progress in his school work noticed and taken care of, but these other qualities of the mind that Dr. Carter speaks of receive little attention, at least before the child starts to school. I was much interested in what he said about the attempt to explain the child's peculiarities by heredity. A few days ago a father brought his five year old boy to my office and when he tried to get the little fellow to stand up and have his clothes removed so that he could be examined, he went into a violent temper and tried to kick the father on the legs, the father smiled and said: "That's just the way I was when I was a boy, and I'm that way now." I did not ask the father whom he kicked, but he was amused at this evidence of inheritance. We should correct these things in the child which have an influence on his mental welfare, and when you get through with that you can take up such questions as what you are going to do with the neuropathic child, and the only child, and the child who grows up in a hotel and receives so much attention that he becomes unruly.

Dr. Florence B. Sherbon, Director, Division of Child Hygiene, Kansas State Board of Health, Topeka: I can't help taking this opportunity of putting in a word for the tonsil. The speaker almost advocated the routine removal of tonsils. I think the time is ripe for us to institute a campaign for preventive measures for saving the tonsillar tissue. I feel very strongly about this, both for personal and professional reasons. The professional reasons first: I have been examining pre-school age children for several years and I am really impressed with the extreme youth of the children when

they first present these enlarged tonsils and adenoid conditions. Mothers bring these children who are just beginning to walk and many already show this tonsillar impairment. I have questioned the mothers and have studied the condition as carefully as possible, and have come to the conclusion that we must educate the mothers as to the importance of the preservation of the breathing passages of the small child. I believe that this tonsillar tissue was put into the child for a purpose, and that it is active during the early growth of the child for very important reasons. I hope some scientist sometime soon will tell us more about the purpose of this tissue and I am listening for someone to tell us whether there is not an important internal secretion in it. I believe it is the battle this tissue puts up in defense of the child which leads to its hypertrophy. When it becomes overwhelmed by this battle and breaks down it ceases to be a protection and becomes a menace. The child who is creeping along on the floor, trying to walk, lives in a very unfavorable climate. I constantly tell the mothers to put their faces down on the floor where these children live and see how different the air is than it is up where they breathe. When the mother goes out her skirts and feet bring in the dirt and swishes it round and round where these children breathe. The tonsillar tissue is assaulted by that material constantly and become hypertrophied. Another factor is the superheated, dry air of the average American home in the winter months. I think these are two large factors in the development of these universally large tonsils in the small child.

My personal reason for this viewpoint, concerning the unknown value of the tonsil, is the fact that I have twins both of whom had large tonsils. The larger twin showed signs of absorption and her tonsils were removed at eight years. She weighed at that time five pounds more than her sister. The other twin had the worse appearing tonsils of the two but as long as she remained perfectly healthy I could not bring myself to have them out. The larger twin was not herself for two years after the operation and the other one shot ahead of her and now, at 13, weighs six pounds more than her sister. She lost some impulse to energy and growth by virtue of her experience and I somehow feel that it was an internal secretion.

Dr. William Palmer Lucas, San Francisco: I want to emphasize the importance of mental health in the pre-school age. One of the reasons that we fail with children is because we have not obtained their interest. We cannot help their intelligence until we gain their interest. During this pre-school age the child is a question box, and his questions can just as well be directed toward health. Any child who plays the game that was demonstrated to us last night by the Health Fairy will never forget about Johnny Carrot and the rest of the vegetables that are personified for them. The child who has had a really modern kindergarten training goes into the school with a better prepared mind for going ahead. The psychology of the child is a very important point and the more pediatricians study child psychology the better pediatricians they will be.

Dr. Ada E. Schweitzer, Chief, Division of Infant and Child Hygiene, State Board of Health, Indianapolis: I want to talk on this subject because we have been trying to do a little work in this line in connection with our conference work over the state. We have found that, as everybody knows but many fail to remember, the child is a very great imitator and is apt to imitate the persons who are most closely associated with it. If the parents are nagging each other all the time the child will exhibit signs of depression. We always emphasize the importance of pre-natal influences on the disposition of the child. When the mother is optimistic and happy the child is usually happy.

The mental attitude of the child itself influences its physical state. If the child is happy, if he looks forward to life and to doing the things he should do, he is usually better off physically. I had one little girl quite recently who was very obviously in poor health, but who insisted that she was in good health. Finally she coughed, but she smiled and said, "That is my regular cough, don't worry." I told her she should not have a regular cough. Another thing we try to do is to ask the children to learn to like the things they should have and to give up the things they should not have. We always tell the mothers that children can learn to like things if they are given a little of the things they dislike every day, until they cultivate a taste for them. The mental attitude of the mother sometimes makes a great deal of difference. Often a mother will say that the child will not drink milk, he does not like it. Then we talk to the child and say, "don't you think it would be fine to learn to like milk. Take a little today and a little tomorrow." The child usually becomes enthusiastic right away and soon learn to like it. Even the mothers who do know what the child should have seem overwhelmed with the child's assertiveness and don't know what to do. The psychological approach by the mother is a very important factor in getting the child to do what he should.

Dr. Theresa Bannan, Director, Bureau of Child Hygiene, Syracuse: I think the problem as outlined shows more and more the need of prenatal care and safe obstetrics, so that the mother will not be disabled and will set a good example for the children. The father does not matter. If the mother is in good health the family will be in good health. The father and the children will be properly fed. If the mother, after the first labor is left in a run down condition, with the baby artificially fed, she will have a cross child and the father will walk the floor. (Laughter.) In other words, the mental hygiene of the child and of the whole family depends upon the proper prenatal care, especially of the first confinement.

Dr. Taliaferro Clark, U. S. Public Health Service, Washington, D. C. Those of us who are familiar with the deaf and dumb child realize that there is a difference between the mental make-up of such a child and that of normal children who are physically sound. Their mental functioning is not the same, the control of their motions is not the same, due largely to the effect

of their physical handicaps. Who of us has not observed a little lame child, a victim say of infantile paralysis standing on the side line watching others at play and tried to imagine his thoughts, his longings, desires, his despondency may be, and the effect of such thoughts on his developing personality. All of us have seen little girls with bright and beautiful face and twisted spine, yet how many of us have thought of the effect, good or ill, of such handicap on their mental make-up. All of us are born having certain mental characteristics and as we grow older manifest different traits of character. Some children are seclusive, shun the society of others and delight to be alone. Other children are gregarious and some of them take pleasure in dominating others. The traits of character manifested by different types of personality when exaggerated, in many instances, are but the symptoms of well-known forms of insanity. Dr. Carter has clearly developed the great necessity of recognizing these defects early in life, so that they may be corrected, if the child is to become a useful member of society. We must learn to more clearly recognize faulty habits of thought and overcome them by proper training to prevent them being crystalized and manifested in adult life by anti-social acts and tendencies.

Unfortunately not all children are susceptible of training influences. In certain cases the defect is in the intellectual field and in such degree that the mental development in adult life will never be beyond that of a small child. In other cases the defect lies in the emotional or volitional field and must be recognized and proper training instituted very early in life if beneficial results are to be obtained. Dr. Carter has called attention to new activity of clinics for children of pre-school age which it is hoped Dr. Curtis will develop in his paper.

Dr. Foote (closing the discussion): I did not write the paper and I do not agree with some of the essayist's rather radical remarks regarding tonsillectomies, but I agree fully with the writer on several points. The observation regarding the influence of physical defects on the mental attitude of the child was very well taken. This view has long been held by non-medical writers. Shakespeare made the deformity of Richard III. exert a great influence on his mentality and morality. Dr. Carter spoke of the fact that Stevenson suffered from tuberculosis, and quoted Morris to this effect that the toxin of this disease may have activated the novelist's genius—a sort of pathological compensation. But it is pretty well established now that Stevenson did not have tuberculosis. Of course Stevenson was an invalid and did wonderful work as such, but we cannot take it for granted that a physical defect is a good thing, whether it produces a genius or not. We should pay a great deal more attention to the fact brought out here concerning the mental attitude of the sick child.

STANDARDS AND METHODS FOR HEALTH WORK AMONG CHILDREN OF PRE-SCHOOL AGE

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I. INTRODUCTION

The necessity for the continued supervision of the child beyond the age of infancy has been discussed at sufficient length to convince us all of its importance, and we are now confronted with the problem of putting our convictions into practice in accordance with some practicable scheme of procedure. Infant welfare work has reached such a degree of development that procedure is relatively standardized, and information covering most of the phases of that branch of preventive medicine may be obtained from a number of books and periodicals, and by observation of the working of a number of well established associations. Such sources of information with regard to work among children of pre-school age are not available. Given the case of a single child between one and five years of age, we are able confidently to make recommendations which we feel will put him in the best possible physical condition and maintain him there. With regard to the proper procedure with large groups of children, however, we are still uncertain.

We are engaged in developing a branch of preventive medicine which, from our present viewpoint, is the only unforged link in the chain of supervision that under ideal conditions should safeguard the welfare of the individual from the time of conception until death. Many of the links are as yet imperfect, but beginning with prenatal care and extending through infant and child welfare, school hygiene, protection for the adult at work, at home and at play, to provision for the aged, this is the least well covered field. The realization that it is our task to create rather than to copy should be a sufficient incentive for our best efforts. This paper is presented with the intention of offering suggestions in that field. Some of them are the result of experience in child welfare work, while others, unfortunately, have no such background to recommend them: but I shall not on that account hesitate to express them

in a dogmatic fashion for even though they may later prove to be impractical, they should at least serve as starting points for discussion. Further progress in this phase of work awaits crystallization of opinion on what to do and how it should be done.

II. IMPORTANCE OF ENVIRONMENT

Childhood may be considered to begin with weaning from the breast. Having passed through the dangers of infancy with the protection against environment afforded by his mother's milk, that protection is suddenly withdrawn, and the child faces a new group of dangers dependent on his increased activity and the new relations with his surroundings. After the period of breast feeding, environment assumes a greater importance, and our area of supervision is proportionately widened. It is not enough to repair teeth, remove diseased tonsils and rearrange the family budget to provide an adequate diet. We must insure that the back-alley playground is free from refuse, that the nearby convalescent from diphtheria maintains quarantine; perhaps take steps to investigate the ice cream vendor's cart, or insure that the father, who is a metal grinder, is protected from emery dust at his work. Theoretically the ramifications of clues afforded by a single family would, if followed to their conclusion, result in an investigation of all human activities. Without attempting to discuss so Utopian a condition, we must bear in mind the fact that anything which affects the family for good or for evil has a corresponding effect upon the child. Supervision of the child requires close cooperation between various sorts of agencies, with the resultant danger of overlapping of effort and the wasting of time in investigation. This danger has been lessened by the development of the "confidential exchange," a central bureau where properly qualified persons may obtain the results of investigation by the various agencies which have already been interested. Without so convenient a means of checking up and correlating activities, waste of time and money is bound to occur.

III. CONFERENCE

(a) *Attendance.*—We, who make preventive medicine our profession, have been many years in coming to a realization of the

importance of pre-school age supervision, and it is expecting too much of the average mother whose horizon is bounded by domestic duties, to have as clear a vision as our own of her children's need for supervision. Through education and because of a healthy fear of depending on her own judgment she seeks our advice with regard to her infant; but when infancy is past she feels entirely competent to deal with the everyday situations which concern her child, and there is frequently at this time another infant who demands the greater part of her attention. The mother seems never to feel competent to trust entirely to her own judgment in dealing with her infant, whether it is her first or the latest of many. There is, consequently, no problem in regard to maintaining the attendance at baby conferences. This, however, is not the case with conferences for older children, who are seldom brought to the conferences spontaneously unless they have some obvious physical defect. Out of a great many children I can recall hardly an instance where the mother has of her own volition, brought her supposedly normal child for supervision.

If our conferences are to be well attended, and it is important that they should be, we must devise means for inducing parents and others to send children to us. This can best be brought about by education of the community to the value of our work. This means, first, the education of the mother. Under ideal conditions all of the children of the older age would come to us as graduates of an infant welfare conference, and this imposes on the doctor and nurse of the infant conference an obligation to make sure that by the time the baby has reached the end of infancy he is ready, not for discharge, but for graduation to the conference for older children. The infant conference is our greatest opportunity for education of mothers, for they have learned to look to us for advice, and to accept it with the assurance that it is valuable. Other members of the community, nurses, social workers, charitable organizations, hospitals, dental clinics, also need instruction before they will realize the value of sending well children for supervision.

Widespread advertising, weighing and measuring campaigns and "drives" for funds are temporary expedients which lend impetus to a new organization and help to speed up one which is

lagging, but their effect is only temporary, and they cannot have the far reaching results of an orderly and well planned scheme of community education.

I feel confident that medical and social workers can readily be made to see the value of our work, and that they will cooperate accordingly. From observation I am sure that a great many, if not most, mothers will not be satisfied to bring their apparently well children to a conference merely for a physical examination and the advice that they should be taken to a dentist or a nose and throat clinic. There must be some activity in connection with the conference which will appeal to the mother as being a definite value to *her* child. This is a part of her education. If we are to adhere closely to our principle of doing purely preventive work our choice of activity is limited. Tonsillectomy, adenoidectomy, and the repair of dental defects, are therapeutic measures closely related to our work, but they are, strictly considered, adjuncts. Vaccination, dental hygiene, and the maintenance of posture classes are preventive functions. Vaccination is usually under the direction of the local Board of Health, and is properly a function of that body. Its performance adds to the work of the conference doctor whose time can be more efficiently applied making it an undesirable activity. Dental hygiene may be made to exert a universal appeal, and its value to the community has been proved by the work done at Bridgeport, Connecticut. This is a desirable activity. Faulty postures of slight degree are the precursors of serious deformities in later life, but are seldom given the attention they deserve in busy hospital clinics where more evident deformities abound. For our purpose I feel that their correction may be considered a preventive measure, and I am sure of the appeal which the posture class makes to the parent. With the establishment of dental hygiene and posture classes in connection with our stations, we can give each child something of definite value which can hardly fail to be appreciated and desired by the parents and still limit ourselves to preventive work. Children of pre-school age are capable of being readily trained to cooperate in this sort of work if they are properly handled.

If, after convincing the mother that it is a desirable thing to bring her child to the conference, we fail to convince the child also

that attendance is desirable from his point of view, we shall still have difficulty in getting him to come. The mother's viewpoint is partly a reflection of her child's, and if he finds nothing at the conference which makes it seem worth while to come again, he can object in so effective a manner that the mother will give up the struggle. During the period of waiting for examination the services of a story teller, picture books, toys and possibly a sand box, keep the children in good humor and make it much easier for the doctor to do his best work.

(b) *Conduct.*—There are several practical differences between the operation of conferences for infants and those for children. For the infant conference a single good sized room is often sufficient, but for the children's conference a separate examining room is necessary, since many of the mothers find it distasteful to have their children's defects pointed out in public.

The doctor needs a special adaptability for dealing with children in regard to both training and personality. His recommendations for treatment and supervision are drawn largely from his own resources, for there are no available sources of reference for his problems, and the success of the clinic depends in a large measure on his personality and his ability to maintain pleasant relations with the children. He must constantly keep in mind that the child's cooperation both in the conference and in the home is requisite to success, and that it can be secured only by unfailing honesty, truthfulness and kindness. A physician's gruff, off-hand manner in an infant conference may deter a small number of mothers, but in the children's conference it results in no attendance in a surprisingly short time.

The physical examination of children is a relatively more important and more prolonged procedure than the physical examination of infants, and correspondingly fewer patients can be examined at a conference. During the usual two-hour period from twenty-five to thirty infants can be examined with a reasonable amount of individual attention, but the examination of ten to fifteen older children occupies the same length of time. Examination of a well child should be done once in three months, and the examination of those below normal as often as is necessary.

During the conference the dietitian, or nurse, should be free to spend her time with the doctor, while an assistant, who is usually a volunteer, looks up records and supervises the undressing and weighing. A second person to interest the children by story telling or playing games is of great assistance. In the Boston Baby Hygiene Association, we have found that college students, who are taking a household economics course, are very helpful. They are assigned to the conference as a part of their course, and are given a small number of families to supervise. Volunteers from a training school for kindergarten teachers have been used as story tellers and play directors. The personnel of our conference, then, consists of a doctor, a nurse (or dietitian), a nurse's assistant, and a play director.

(c) *Workers*.—Under the present method of training preventive workers it is to be questioned whether the conference for older children should be in charge of a dietitian or a nurse. Considered from the standpoint of efficiency it is evident that if the nurse who has taken care of the infant continues the supervision through childhood, a considerable saving in time will be effected, by making it unnecessary for a second person to win the confidence of the family and become acquainted with its social problems. The supervision of the younger and older children of the same family by different persons is certainly a duplication of effort. With supervision continued after infancy the amount of work to be done by a welfare association increases at a surprising rate, making measures for greater efficiency correspondingly more necessary.

The training of the average dietitian is deficient in that she is unable to detect abnormal physical and hygienic conditions which are obvious to the nurse. The results of a physical examination frequently mean little more to her than a list of diagnoses whose significance she cannot quite grasp, and her management of these cases in the home is controlled by blindly following the doctor's instruction after the fashion of a conscientious, but untrained mother. She must, of necessity, neglect many opportunities for service because of her inability to recognize them. She has, however, a training in the management of the more complicated social problems of childhood and in the handling of difficult dietary prob-

lems, which the nurse lacks. In short, neither the nurse nor the dietitian, as trained at present, is entirely competent to supervise children from infancy to school age. If we are to have a single person take charge in both types of work, we shall have to secure for her a broader education, than is now given to either the nurse or the dietitian.

IV. ACCESSORY CLINICS

The number of physically defective children encountered in public schools is a measure of our laxity in child welfare work, and a classification of their defects may be used as a guide in determining what types of preventive work are most needed during the pre-school period. The following are the commonest defects found on examination of twenty million school children:

- 1 per cent—Mentally defective.
- 5 per cent—Tuberculosis now or in the past.
- 5 per cent—Defective hearing.
- 25 per cent—Defective sight.
- 15-25 per cent—Diseased tonsils or adenoids.
- 10-20 per cent—Deformed feet, spine or joints.
- 50-75 per cent—Defective teeth.
- 15-25 per cent—Malnutrition.

We have, then, to consider the following types of work.

1. Psychopathic: Except for a rare case of evident feeble-mindedness, few children of this age show a sufficient mental defect to raise the question of their being sent to special schools. Occasionally, however, we suspect subnormal mentality from our knowledge of the parents, and in such a case expert opinion is helpful in giving us assurance that we are justified in handling the child as one of defective mentality.

2. Tuberculosis: Clinically active tuberculosis is also relatively rare. Infants who contract tuberculosis usually fail to reach the pre-school age, and while doubtless many children contract the disease between the ages of one and five years, it has seldom progressed far enough to be evident except on a most careful physical examination. That fact makes it important that the services of an expert should be available to pass on doubtful cases and those which have suffered known exposure. It is difficult to decide whether to

be pleased or concerned over the small number of children who present a positive diagnosis. If, as has been maintained, a large proportion of initial infections occur in childhood, cooperation with a tuberculosis clinic is of first importance.

3. Eyes: Defects of vision, except those of marked degree, and those resulting from corneal scars produced by an old keratitis, are seldom encountered. Visual defects begin to be evident after the child has entered school, and may, except for isolated cases, be left to the school physician.

4. Ear, Nose and Throat: From the above table we find that 15 per cent to 25 per cent of school children have diseased adenoids or tonsils, and that 5 per cent have defective hearing. The latter defect, like defective vision, is usually discovered at school, but unlike defective vision its prevention in many cases is within our province through the removal of diseased adenoids. The treatment of conditions of the nasopharynx is one of the most important parts of our work, and its value is not to be minimized. The removal of hypertrophied adenoids is a very frequent and a very necessary procedure, but the criticism that has been applied to unnecessary tonsillectomy in private practice is equally applicable in our work. The removal of tonsils as a shot in the dark to improve the condition of a child who is below standard, may do more harm than good, and should be done only after serious consideration, no matter how great our desire to do something tangible. I am sure the number of harmless tonsils that we remove far exceeds the number of diseased ones that we leave in place. We should, however, have provision for the prompt treatment of these conditions when it is indicated.

5. Orthopedic: Deformities of the bones, spine and joints are relatively frequent. A few are congenital in origin, but the majority are the result of rickets and of faulty nutrition. The latter class is another measure of our inadequate earlier supervision. It is gratifying to note that these deformities practically do not exist among children who were under the supervision of an infant station during their first year. Their prevention is distinctly our individual problem, but under present conditions many of them are well established, and these, as well as the cases of congenital origin, require the service of an orthopedic clinic.

6. Teeth: Dental caries is by far the commonest defect found in children of all ages, and the dental clinic occupies an important place in our work. Here again the problem is partly concerned with infant supervision and the prevention of rickets. Rickets lowers the calcium metabolism just at the time when the permanent teeth, although unerupted, are forming their enamel. The first dentition is rarely defective except as a consequence of neglect; proper dental hygiene during the year before school, combined with whatever dental treatment may be necessary, should insure the preservation of the first teeth until their function has been accomplished, thereby avoiding the evil results of focal infection and malocclusion. The greater frequency of diseased tonsils in the presence of carious teeth is of itself sufficient reason for preserving the first dentition in good condition.

7. Nutrition: Improper diets are nearly as common as carious teeth. In many cases malnutrition is the expression of the effects of disease and readily disappears when diseased conditions have been corrected. There is in addition a class of cases where malnutrition may be considered as an entity, not dependent on other abnormal physical conditions. Under such circumstances the remedy is entirely dietary, and the services of an expert dietitian are needed to outline a suitable diet and to assist in rearranging the family budget so that proper foods may be purchased.

To sum up the things mentioned above which are essential to our work—a tuberculosis clinic, an ear, nose and throat clinic, an orthopedic clinic, a dental clinic, and a nutrition worker. Even with these facilities we shall find occasional children who are subnormal, and who fail to show improvement under the closest supervision. In such cases a complete change of environment, if only for a week or two, will often give the needed impetus, and save months in getting the child into proper condition. It is desirable, therefore, to have some means for providing a change of scene, even if for a limited number of children. It is not always possible to maintain a farm or a camp at the seashore, but arrangements may be made with a trustworthy family to care for a child during a short period, either for a small sum or for the expense of his maintenance.

Supervision of the child's physical welfare is our most obvious

function, but through our close association with the mother in the conferences and in the homes we should take advantage of the many opportunities for the direction of mental hygiene and help to prepare the child for contact with his fellows by directing play and teaching discipline and the beginnings of work.

Clinics such as I have mentioned are usually available wherever there is a general hospital, and except for the nutrition clinic, are not a part of the welfare association. Most communities have also arrangements for taking care of cases of the acute infectious diseases when they cannot be properly isolated at home. When a child contracts measles, scarlet fever or diphtheria, he may be cared for in the hospital, but should he have whooping-cough, he is treated as a pariah by both physicians and laymen. This disease has a mortality of about twenty-five per cent during infancy, and is far more fatal at that time than is any other of the acute infectious diseases. Its mortality decreases considerably after the second year, but it is still a serious disease whose spread among the infants is dependent largely on child carriers. After the diagnosis of pertussis has been made it is the custom of most hospital outpatient clinics to refuse admittance again until the patient has entirely recovered. Thus one of the infectious diseases which carries the greatest mortality during infancy is allowed to go absolutely untreated. If, as most of us believe, there is value in the administration of pertussis vaccine, it should be made available to all children by the establishment of special clinics. Transportation of children from homes to hospital clinics is often difficult to arrange, and requires the services of a worker whose time could be better spent in less routine work. The trip to the hospital can be made attractive to the children, and the services of a trained worker spared, by cooperation with a volunteer motor corps.

V. SIZE OF DISTRICT

The size of a district that can be effectively covered from a single station, will, of course, vary with the density of the population. We have found that the maximum number of either infants or children that can be supervised with efficiency by a single worker is one hundred and seventy-five. Figuring on this basis we

may assume that if a single worker is to supervise a group of children from birth to five years, her maximum registration will be one hundred and seventy-five. If this number of children is evenly divided among groups of increasing age, we may expect twenty per cent of them to reach the age limit each year. On this basis the worker will be able to take on thirty-five new infants a year to supplant those who have gone to school. It is impossible with our present meagre data to set down a fixed rate of turnover for this work, for the birth and death rate vary considerably according to living conditions, nationality, etc. We should, however, be able to give each worker a fairly even age distribution in her group, since the number of families where there are two or three children under the age of five is equalled by the number of families where there is a single infant.

The supervision of our older children, as well as infants, results in the very rapid growth of an organization during the first years of the new arrangement. Without considering the normal yearly growth of an infant welfare station, the extension of care to the age of five years means that the registration will be doubled during the second year, trebled during the third year, and quadrupled during the fourth year. This does not necessarily entail a fourfold increase of all expenses, for the stations and part of the apparatus will serve for both types of conference. It does, however, mean fourfold increase in the number of workers, whose salaries are our greatest item of expense, and an increased expenditure for supplies. Few associations, however well organized, can meet such an increased expenditure, for most of us find that our present rate of growth is limited by our income. It will be necessary, then, either to spread our extended supervision thinly over a number of stations, or to limit the supervision of older children to a few stations, extending the work as our resources allow. From the standpoint of immediate benefit to the children, the former plan seems more effective, limiting its application to those children who need it most; but it is to be hoped that for purposes of standardization some of us will concentrate our efforts, if need be on only a single station. This will possibly be at the expense of the present pre-school age generation, but will react to greater benefit on the many generations to come.

SUMMARY

Briefly to summarize the foregoing statements: The procedure to be followed in the supervision of older children differs from the established procedure for infants. This difference is mainly due to the increased importance of environment with the beginning of childhood; the need of the community and especially of the mothers, for education; and the need of securing the children's cooperation.

The following subjects are those which seem to me most worthy of discussion:

- (1) The maintenance of accessory clinics (posture, dental, and nutrition).
- (2) The training of workers.
- (3) Frequency of physical examinations and reporting to conference.
- (4) Size of registration for each station.
- (5) Methods by which the work may be extended.

DISCUSSION

Dr. Worth Ross, Health Officer, Detroit: If anyone entered this room with doubts as to whether or not that period of childhood which has been aptly called "no man's land" should be made the objective of a concerted and vigorous attack, I am sure his or her doubts were removed on listening to the discussions this morning. If we are to reduce such defects in our young adults as appeared so frequently in those who should have been in the prime of vigor and physical efficiency in 1917, we must realize that without lessening our efforts during other periods we must direct our attention toward the pre-school age, thereby, as Dr. Curtis has said, forging the weakest link in the chain of activities.

Coming as it does between the age of well supervised infancy and the school days of systematic inspection, the obvious practical point arises: Should another agency enter the field to take up this important work or should the agencies now functioning in a more or less standardized way extend their influence to cover the need?

If pre-natal life, infancy and the pre-school period are successfully accomplished the child would enter school with a one hundred per cent chance of physical development and progress. The work of the school nurse would then include care of the infections incident to group life of childhood and the teaching of hygiene. Is it too much to expect the schools to require a certain physical standard before admission is granted? The prompt correction of the very frequent gross defects, such as carious teeth, adenoids and eye-strain, would surely promote mental progress. Some kind of a mental test is now in vogue. Why not include the physical? Such a step

would bring the child's condition to the parents' attention in a forceful way and create the interest making general supervision and care of younger children easier to accomplish.

As already pointed out, either from lack of facilities or our failure to stress the importance of frequent examinations during early childhood, it is usually acute illness or obvious defect which prompts the parents to seek assistance.

Should the pre-natal or baby hygiene nurse continue her work on a basis of so many mothers or babies to supervise and another nurse enter the field in behalf of the older children not yet arrived at school age, or should the present districts be so rearranged as to permit of the supervision of so many families including expectant mothers, babies and pre-school children?

Should the territory of a given milk station or clinic be reduced, and additional stations or clinics established, so that baby's older brothers and sisters who are not in school may be given attention, or should additional sessions or conferences be arranged for the older ones alone?

These questions arise in seeking a practical solution.

Dr. Curtis referred to the importance of the personality of the attending physician. Among educated people the intellectual or professional appeal may carry a tactless, unsympathetic or ill-mannered physician to success, but among the people seeking the educational advantages of the clinic or conference such is not believed to be true, and the physician who is most successful in "selling" his ideas on baby care to the mother is, in my observation, the one who best understands child psychology and therefore succeeds in dealing with the older children. It is obvious that something definite must be given by the physician, if only commendation for the good care bestowed on the child or praise for the child.

We must look for physicians to conduct the clinics both trained and interested in the preventive side of pediatrics and not merely attracted by the small stipend usually allowed. We believe it would be more interesting to these physicians and more valuable in their experience if the older children, in addition to the babies, are admitted to their care. If a physician has succeeded in prescribing a formula for the baby the mother is more ready to change her habits in the preparation of foods and the feeding of the older children on his advice than on that of a stranger.

With the strict specialization of nurses there is often the danger of "over-investigating" a family, thereby losing the influence which one nurse coming as a friend can have after she has broken through the natural reserve of the mother. Such reserve is apt to grow in resistance with each attack of a subsequent visitor. In the large family it would facilitate greatly the performance of the over-worked mother's many duties if she were able to take the baby and one or more older children to the same conference.

For those baby stations or conferences which are not already filled to capacity this experiment might well be given a trial. Additional sessions or the establishment of more stations or clinics would solve the problem where the baby attendance now taxes the available capacity. Generally the

nearer the home the facilities afforded and the more convenient it is made for the mother, the more ready is she to avail herself of the advantages. Renting additional quarters involves considerable expense, but this may be avoided by holding the clinics in school buildings, libraries, settlement houses or Sunday School rooms. Such an arrangement involves a most commendable spirit of co-operation in a community.

Dr. Curtis has emphasized the necessity of co-operation with such clinics as dental, tuberculosis, orthopedic, eyes, etc. I should like to add that if the clinic-to-be is used principally for diagnosis and nutrition work, referring other conditions to existing institutions, more distant perhaps, it is believed that much good will be accomplished. Many a mother has a vague idea that her small Johnny needs attention, as, for example, to have his teeth "fixed," but she lacks initiative sufficient to seek out the proper agency to accomplish the needed result. If properly presented at the clinic the idea will meet with a response on her part, and especially if explicit directions are given.

In conclusion, may I add a few words with regard to our experience in Detroit? Due to various problems arising from an enormous growth of the population, our clinics, established to give prophylactic care to babies up to two years of age, have not been able to limit their service to that field alone. Many babies with minor illnesses have been treated and because of the evident great need pre-school children have been included.

In spite of the acute shortage of nurses we have been able to reach about one-third of the 25,000 babies born during the past year. During that period 4,600 pre-school children were in attendance and 897 corrections, usually surgical, were made on our findings. Although this work has been more or less incidental to the baby hygiene work, we feel its importance and are impressed by the tremendous possibilities in this field for the future.

Dr. Charles Hendee Smith, New York: I agree with the paper in almost every respect, especially the keynote. The one thing I cannot agree with is the importance of the association of tuberculosis clinics as they are at present situated or constituted in New York. In the first place, tuberculosis infection does take place in these young children but the man who looks for it with his stethoscope will not find it. Until pediatricians are made to understand that the picture of tuberculosis is not pulmonary but glandular in childhood we will have this infection going on unrecognized. We used to refer them to the tuberculosis clinic for diagnosis, but they were always sent back as "no case." The picture of the child thus infected is a positive von Pirquet, failure to gain weight, emaciation, irregular fever, and perhaps night sweats, making it easy to recognize such children, and they must be recognized and properly cared for or pulmonary lesions will develop later in life.

Miss Dora M. Barnes, George Peabody College for Teachers, Nashville: Reference has been made to the fact that public health nurses as at present trained are not fully adequate for the care of children of pre-school age.

There are present at this meeting many of the directors of courses in public health nursing, and I am sure that it would be valuable for everyone of us to receive suggestions for the improvement of public health nursing courses from this point of view. I am sure that no group is as well qualified to give such suggestions as is this group, and I hope such suggestions will be made.

Dr. Lydia A. DeVilbiss, U. S. Public Health Service, Washington, D. C.: I note that the speakers have used the terms "baby clinic" and "station" interchangeably. That may not be any disadvantage in the large town that is accustomed to such work, but in a place where such work is comparatively new we would be at a loss if it were not given a definite name. We use the term "baby health center." This is where the babies are brought for inspection and advice. When school opens the school nurse can bring in the children of school age, and so our baby health center is an entering wedge for the childrens' health center and the adults' health center. We are using a standard form in the Public Health Service to give our work a uniformity, which we find of value.

Dr. Florence B. Sherbon, Director, Division of Child Hygiene, State Board of Health, Topeka, Kansas: In this discussion we should consider the part the mother should play. The great importance of instructing the mother as to her part in correcting these defects should be stressed at all conferences. For illustration, the point was made by the speaker that defects of posture are usually attributable to rickets. The reality of it is that faulty clothing and bad hygiene in the very young child are also much to blame. I think the first duty of the examiner is to look at the clothing in which the child comes to the conference. See whether he has a proper sort of stocking supporter, whether he has ever been permitted to exercise freely and build up the muscles of the back and shoulders. In too many instances he has never been permitted to climb, has never been permitted to fly from a trapeze or hang his weight from anything. The ordinary commercial stocking supporter and underwaist pull on the top of the shoulder and he comes up with winged scapulae and many faults that are not attributable to either malnutrition or rickets. We should educate the mothers in our conferences and I think this point has not been sufficiently stressed.

Dr. Lucas: What correlation do you make between entertainment and health conference? You say you have to get hold of the child. Do you make any use of entertainment in your work?

Dr. Curtis (closing the discussion): The hour is late and I will simply say in reply to Dr. Lucas that we have not made any use of entertainment in connection with our work.

SCHOOL AGE AND ADOLESCENCE

COMMITTEE

Dr. Richard M. Smith, Boston, Chairman

Dr. Taliaferro Clark, Washington, D. C.

Dr. S. McC. Hamill, Philadelphia

Dr. Anna E. Rude, Washington, D. C.

Dr. Charles Hendee Smith, New York City

SELLING HEALTH

SALLY LUCY JEAN

Director, Child Health Organization of America, New York City

We have all heard much in the last few years of "Selling Health," but most of us have only a vague idea as to the meaning of the term or as to how health is to be sold.

There are two methods of reaching our public—through the spoken word and through print. The former method must necessarily be limited, first, because there are comparatively few individuals who can get their message "across," and second, because those who can are so in demand that only the large important groups can secure their time. Printed matter must be the medium upon which we depend.

How much the words "printed matter" bring to mind bulletins, reports, leaflets, magazines, posters. Most of us recall endeavors to make such material of interest, and even remember reading some of them when nothing of greater interest was at hand. We can recall going through page upon page of "good stuff" that was most difficult to read—sometimes that of our friends and sometimes our own. We have not made a success in public health literature, we will all admit, I think, and why?

PAPERS AND THE PRINTER

Our custom has been to call upon the man or woman who has dug out a new idea to write a paper on that subject, depending upon the printer to put it into readable shape. If the person is sufficiently well known, you can be sure of a broad circulation, but we are not sure of a reading public. As the crude old saying goes, "You can lead a horse to water, but you can't make him drink." The prominent name will make professional people buy an article or subscribe to a magazine, but it does not secure assimilation of the facts contained therein. There is a technique in the presentation of facts which has not been included in the usual college course, and we must secure this assistance if we are to produce printed

matter at the least expense to reach the greatest number. Most public health groups cannot afford the full-time services of a professional advertiser, but it is usually possible to get such advice for a special need.

PROFESSIONAL ADVERTISING ADVICE

My only role in discussing this subject, is that of an amateur who has been somewhat successful in producing readable literature with the assistance of a commercial advertiser. When a group of doctors from the Pediatric Section of the New York Academy of Medicine about two and a half years ago decided to form a general committee for the purpose of raising the health standard of the school child, the president of one of the leading advertising firms in New York was consulted, as to the name to be adopted, forms for stationery, and so forth.

A nominal amount was paid the first few months for his time, but since then he has been elected a member of the Executive Committee and gives of his time and that of his staff as needed. The "Child Health Organization of America" was accepted as a name with his approval, and practically all of the publications printed through our office, or reprinted in the Government Printing Office through the United States Bureau of Education, passed through his hands.

A PHENOMENAL SALE

The sale of this material has been phenomenal—2,600,000 copies of one book having been sold in less than two years—without the assistance of an agent. The Department of Documents reports a greater sale, with possibly one exception, of one of these publications in a given time than has ever been known in the history of the Department.

While consulting with a Southern University staff lately, I was asked for suggestions to improve their bulletins, and was told, "of course, we haven't anyone here to assist in their layout as you have in New York." I agreed to think over their problems and criticize their bulletin. On the train returning, I met a gentleman who proved to be the head of an advertising firm living in a town quite near the university visited. This man said he had always been

eager to improve those bulletins, but he did not suppose his suggestions would be welcome. It was not difficult to make the contact and you may be sure we shall see a greater readability in the reports of that university.

A FEW FUNDAMENTALS

There are several points which we can all observe:

Be sure of your facts. Reduce them to their simplest form.

Insist on good printing, and large enough type, well leaded, to be read easily.

Use good paper—wide margins, and dull finished papers are especially desirable.

Short paragraphs are best. Make them subtle and suggestive—leave something to the imagination of the reader.

If illustrations are not possible, use large initials.

POSTERS

I know very little of successful posters, as mine have usually been failures, and are hidden away in the storeroom; but through our mistakes and those of our friends, we have learned that the poster must attract attention, make an instinctive appeal, be designed by a poster artist if possible, and carry only one message. Change the poster frequently. Think over the posters you remember. Close your eyes and see which ones come to you first. Most of us remember the "watch him register" which was one of the large signs carried lately, and the "toasted tobacco" sign. Why? One appeals to the curiosity, and the other to the senses of taste and smell—we all like the idea of toasted tobacco—that "instinctive appeal."

A poster came to us the other day, published by one of the most important groups in America with plenty of money at their disposal. A photograph had been enlarged, the name of the organization printed in big letters at the top and the subject to which they wished to call attention printed in small book type, one sentence containing about ninety-five words. Highly glazed paper had been used, which is not inexpensive. That group will wonder why their poster is not in demand.

Many helps in poster making and kindred subjects will be

found in the "A. B. C. of Exhibit Planning," written by the Routzahns and published by the Russell Sage Foundation. Harry L. Hollingsworth, Associate Professor of Psychology in Columbia University, has written a most stimulating book, "Advertising and Selling," which is a psychological study of the subject. This can be procured through Appleton and Company.

Again good posters are produced and shown in such masses that the onlooker is confused. A few posters changed frequently are of great value, but they are best used to stimulate the interest of local talent. The competition among children or local artists will have much more value. This is almost an untouched field but has proven to have great possibilities as developed.

A western city group offered prizes last year to the school presenting the best posters and compositions on "how boys and girls grow big and strong." The results were beyond all expectations. The children from the Kindergarten to the Eighth Grade showed that originality and imagination which we so seldom get from our Health Departments.

MOTION PICTURES ON HEALTH

Devices with action, colored lights, and so forth, are of value, though expensive. Motion pictures will, without doubt, be developed and used extensively; but we have few today that are noteworthy. Not until organized health groups realize that this is a commercial field and must be entered with the assistance of motion picture experts, can we hope for successful pictures. Making a picture means a large expenditure of money and time—much time of an imaginative person with health knowledge working with the motion picture expert. When we learn to handle this tool in this way, we shall make it profitable to the cause of health education, and it will pay for itself in a few months.

NEWSPAPER AND OTHER PUBLICITY

Before closing, I want to suggest that every State health group, at least, have a clearing house for child health literature, so that workers in the most remote parts of the field may call upon such a central body for assistance in preparing articles for the ever important local papers as well as for the more intimate group. The State

body should use the best ideas developed by the National groups, the National bodies in turn profiting from clever developments in the States. Not until some such plan is developed are we going to reach our public with a minimum amount of effort.

It has been said that our infant death rate depends upon the amount of money we are willing to spend. May I add that the health of our boys and girls depends upon the amount of imagination we are willing to expend.

We have talked and taught health laws and the results of breaking laws and the results of breaking these laws and have not succeeded in making a dent upon the habits of our young people. A circus clown can be a more effective teacher for boys and girls than the most learned scientist. The clown can interpret the laboratory to children in their own language and so establish health habits before these boys and girls are old enough to understand mature presentation. I see the day not far off when the health experts will find it quite worth while to sit with school authorities in developing plans for the actual teaching of health in the elementary schools; not just to work out methods of discovering and correcting defects, but plans for interesting each child from the kindergarten to the college in the practice of health habits. With such a co-ordination, we may expect to build strong boys and girls fit to live life fully.

DISCUSSION

The Chairman: One of the most important factors that we have to consider in the whole question of welfare work is how we shall inform ourselves, and the parents and the community concerning the things that are essential to health. Therefore it is fitting that the first paper this afternoon concern itself with methods of publicity in health education. The discussion will be opened by Mr. George R. Bedinger of the New York County Chapter of the American Red Cross.

Mr. George R. Bedinger, New York City: In line with what Miss Jean has been saying, I think it will be of interest to you if I say a few words about what we are trying out in New York in actual paid advertising. In our Bureau of Public Health Information we have recently opened an advertising section to make known our clearing house for all kinds of health information and literature on health subjects. It is meant for the whole of Manhattan. We tried advertising in the newspapers, two or three of them,

but realized that our advertisements were not right. We found that we must make the people who read the advertisements understand that we have something to give them, so in addition to letting them know that we had a bureau of public health information we have for two months been playing up some very excellent pamphlets, literature which we are able to distribute free to local groups. We advertised once a week in August and September in the largest "low-brow" paper in New York. There is no need of mentioning the name—you all know it. We advertised the Children's Bureau, as many copies as were needed of "Infant Care" and "Prenatal Care." The American Social Hygiene Association, "Child Questions and Answers," the "Boy Problem," the "Girl's Part" and a leaflet of the Maternity Center Association. In August we received direct answers by mail, wishing that this material be sent to them, from 807 persons, and in September we received 1,085 requests. The advertisements were written in a very personal way. The Bureau up to the end of June was receiving only about one hundred requests a month for health information or for health literature. The American Social Hygiene Association in its current bulletin speaks as follows on this experiment: "In planning a program for public health information the New York American Red Cross decided to devote it to advertising the literature of the various phases of public health. . . .

"In one of these advertisements the question was asked, 'Who answers your child's questions?' 'Does your child ask embarrassing questions, or, worse yet, does it ask you no embarrassing questions?' At the end of each advertisement the public was told of the free distribution of the pamphlets."

May I say a final word in regard to Miss Jean's constructive work? Her ideas are of as much service in a small place as in a great city. We are planning to have in the American Child Hygiene Association state committees of this organization. Would it not be possible to work out some scheme whereby these committees could be the clearing house for the proper data and for the really effective literature that Miss Jean is pleading for in such a splendid way?

Dr. John A. Foote, Washington: I think that there is no doubt but that this question of proper publicity in the work we are doing is one of the most important things that has come up before this meeting. It is true that the Child Health Organization has been a pioneer in this work, and as set forth by Miss Jean, has produced most valuable results. This printed work complements and emphasizes the work that social workers have been doing by word of mouth for some time and must continue to do. At the same time the influence of the spoken word is somewhat limited. In order to extend our work we ourselves have found it necessary to urge our members to get more members and to extend the circulation of our publication, "Mother and Child." We are also going into the field of state and national politics when we urge the voting of funds for child health work. We believe

that liberal appropriations by legislative bodies are justified. In order to secure this support we must illuminate the social consciousness of the people generally, and not limit our message to the more intelligent class. There are many, many people who will not be interested in pamphlets, however attractively prepared—who aren't concerned with even such mooted questions as the League of Nations and whose only discussion of legislation is perhaps limited to the effect of the Eighteenth Amendment—possibly the parents of the 40 per cent uncared for children of whom Mr. Hoover spoke last night. But these individuals do read the daily papers. They may be interested in child welfare work, but so far are not. We must follow especially one suggestion Miss Jean made, and that is to place our arguments whenever possible in the public press in the way of news. Let us have this material prepared so that "he who runs may read," and not condemn this large class of readers to the position of the old lady who was going to Egypt and was bemoaning the fact that she could not understand a word of hieroglyphics. Health is the most vital thing in the world, and babies are among the most interesting things. People will be glad to read about these things if they are given the opportunity.

Dr. William Palmer Lucas, San Francisco: Just a word or two regarding catching the imagination. All of you who were in France during the war were impressed with how often you saw the Punch and Judy shows. In our work over there we used them in connection with our exhibits and I think they did more to get our ideas "across" than anything else. Dr. Grulee can testify that the puppet show was one of the most successful things that was put on in his demonstration at Lyons. We are going to try out something of the same sort in San Francisco, and a year from now we can tell you how well it works. The greatest paper in San Francisco is following the plan Mr. Bedinger spoke of in New York City, and is offering to run a series of articles on health procedures written by school children. I think we can tell you in a year whether that will really wake up the school children or not.

Dr. Merrill E. Champion, Director, Division of Hygiene, State Department of Public Health, Boston: I should like to say a word from the point of view of an individual who has to get out some official publications. I was very much interested in the subject as brought out by Miss Jean; we all appreciate the attractive material she gets out. I feel some little sympathy for the editor she spoke of for I suspect that if he were to pass some of the things which could be brought out with entire propriety by an organization supported by private funds, he would come in for severe criticism for having expended the taxpayers' money unwisely. I think the official agency must be satisfied with getting out material which will reach the average individual at the least expense. It seems to me that a private agency, such as an Anti-Tuberculosis Association, can do a great deal more by using its money for educational work, thus supplementing the work of the health department,

than by carrying on clinics which really are the job of the official agency.

I am interested in what has been said about the newspapers: I think it is an ideal means for getting publicity in public health work. The newspapers will run your material as long as it is new, but when it is old and no longer news, they are no longer interested. The newspaper man gets his results by saying things that the average professional man is not willing to say. We found, for example, in Massachusetts that newspaper publicity given to one of our pamphlets resulted in such a run on the department for copies that the elevator man could hardly accommodate the numbers who were seeking them. But this was only a temporary demand.

Another thing worth mentioning is the use of the movie. The movie can always be used in any city or town and it will always draw an audience. For this reason, so far as my experience goes, it is always wise for a health official who has money to spend to place some of it in moving pictures if he wishes to get results quickly.

The Massachusetts Health Department ran columns in the newspapers for a year but found that the general public was not educated up to the point where it could use such a service wisely. What the public wants is to have the newspaper tell it how to get cured of an incurable disease.

Miss Jean (closing the discussion): One thought has come to me in the discussion that I think is rather important, and that is if we do work that is interesting enough the papers are always willing to carry it without our paying for it. We have never spent a dollar in paying for advertising and I am quite sure this can be true of all groups if they do the sort of work that is spectacular. However, it is not always possible to do that. If we secure the interest of one or two papers and then carry out a program the paper is willing to carry it for us. I do not think that paid advertising is advisable in the beginning, but I think it is quite worth while to pay a publicity expert to get papers and magazines to carry the material.

HEART DISEASE IN SCHOOL CHILDREN

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During the past few years there has been a gradually awakening consciousness to the fact that the cardiac problem has been too long put aside. The time has come when it must be recognized as a large problem and one which deserves a completely organized program of the type which has been developed for tuberculosis, the care of infants, and so forth.

The large incidence of heart disease is unquestioned. Organic heart disease competes with tuberculosis and pneumonia for first place among the causes of death. It is true that death takes place in adult life, but the heart disease is commonly acquired during the school age. The number of cases of heart disease which are discovered in school surveys varies considerably, but every school survey detects a certain number of children with cardiac lesions. The estimates of the cases among school children in New York City give from one and a half to two per cent, that is from 18,000 to 25,000 children. Our hospital wards are crowded with cardiac cases and they make up a large proportion of the children applying for treatment in out-patient departments. The draft, industrial and insurance examinations have all given the same result, *i. e.*, about two per cent of the men examined have been found to have heart disease. This means more than 2,000,000 cardiacs in the United States, since the incidence in women is even greater than in men.

NEW YORK'S TWENTY THOUSAND

What will be the ultimate fate of the 20,000 children in New York with heart disease? The hearts of a certain number of them are hopelessly damaged and the children are doomed from the start. They die after a few months or years of acute suffering. The large majority of them, however, are not struck down permanently, but after warding off the first onslaught of their disease, live on

with or without symptoms for a number of years. It has been said that it is not worth while to educate cardiac children, that they all die in early adult life and that money spent upon them is a waste of public funds. This view is not justifiable, for it is not borne out by the facts. Most of these children do grow up; a great many of them under proper care can be made to lead comfortable lives and become useful citizens. A certain number, perhaps not large, actually outgrow their heart disease, and have left neither symptoms nor physical signs. Others make a functional recovery even though the murmur persists. A very considerable number of children who have gone through acute decompensations can be made so far to recover as to go on through school and take up a not too strenuous occupation. There is in addition a large number of children who have definite cardiac lesions who can be kept so well and strong by care and supervision that they never approach the stage of decompensation. It is for these last groups of children that we must have a definite program laid down which will do more for them than has been done in the past.

PREVENTION

In mapping out a program for the care of the cardiac child, the first thought is prevention. Here lies the greatest difficulty at present, but here is the most fertile field. We all believe, and it has been demonstrated with fair certainty, that the portals of entry for rheumatism and other diseases which affect the heart are diseased throats and carious teeth. Statistics are lacking at present to accurately demonstrate that wholesale removal of tonsils, and perfect care of the teeth would diminish the incidence of rheumatism, but it is impossible to avoid the feeling that this would probably be the case. St. Lawrence has recently demonstrated that a series of eighty-five children had fewer sore throats, joint pains, attacks of chorea after a complete tonsillectomy than before. The facilities in New York, and in most cities, for the care of throats and the teeth are ludicrously inadequate, and until they are multiplied many fold we shall have no accurate figures to prove that this is true for large numbers. The time must come, however, when the cities and states awaken to the fact that these measures of preventive medicine would give an enormous return for money invested by the prevention of illness and of crippling by disease.

Besides the removal of the portals of entry another preventive measure is the better care of children suffering from the infectious diseases which affect the heart. Rheumatism must be diagnosed earlier, children with it must be given greater care, kept in bed longer than in the past. Chorea must be regarded as a grave disease and not merely treated with tonics, fresh air and exercise. These children all deserve bed treatment and after their acute attack should have their tonsils removed and their teeth given the utmost care. The occurrence of two or three cases of rheumatic infection in one family which we see from time to time makes it probable that we should keep the rheumatic child away from other children during his illness and for some time afterwards.

DIAGNOSIS AND CLASSIFICATION

If anything is to be done for the cardiac child, the diagnosis must be made as early as possible and he must be given every opportunity to escape the disastrous consequences of neglect. This means more thorough and more frequent examinations of every school child. School examinations have done a great deal in raising the level of school child health, it is true; but until they are improved in quality and frequency they will fall short of their maximum usefulness. The school physician at present must examine too many children too hastily to detect every cardiac case. In some cities he is not allowed to remove the clothing from the child's chest, with the inevitable result that many mistakes are made. The teachers can, of course, pick out the children with shortness of breath and evident cardiac weakness and set them aside for special examination, but it should not be necessary to wait until this late stage to make the diagnosis. Unfortunately, the school physician is not always properly trained in recognizing heart disease. It is a common experience in New York City to have children referred to hospitals as cardiac cases who fail to reveal any sign or symptom of heart involvement upon the most careful examination. It is probable that at least as many mistakes are made in the other direction and that much actual cardiac disease escapes detection.

The diagnosis and classification of cases having abnormal physical signs in the heart has been far from satisfactory. Various attempts have been made to classify children on a functional basis so that it could be made clear to doctors, nurses and teachers as to

how great is the functional disability, and how much work each child should be allowed to do. The classification adopted by the Associated Cardiac Clinics is in general use in New York at present, and while not entirely satisfactory has been a step in the right direction. It is as follows:

- CLASS I. Patients with organic heart disease who have *never had symptoms* of cardiac insufficiency under ordinary conditions of activity.
- CLASS II. Patients with organic heart disease who have had such *symptoms in the past*, but who do not have them at present under ordinary conditions of activity.
- CLASS III. Patients with organic heart disease who *at the time of observation have symptoms* of cardiac insufficiency following ordinary exertion.
- CLASS IV. Patients with *possible heart disease*. Patients who have abnormal physical signs in the heart, but in whom the general picture of the character of the physical sign leads us to believe that it does not originate from cardiac disease ("Functional" murmurs, arrhythmias.)
- CLASS V. Patients with *potential heart disease*. Patients who do not have any suggestion of cardiac disease, but who are suffering from any infectious condition which may be accompanied by such disease; or who have suffered from such diseases; *e. g.*, rheumatic fever, tonsillitis, chorea, scarlet fever, syphilis, and so forth.

It is recommended that this classification be used as a part of the diagnosis of each patient; *e. g.*, Chronic Cardiac Valvular Disease, Mitral Stenosis and Insufficiency. Class II. The potential group is included because it is upon these that the most important preventive work can be done. This classification at least serves the purpose of making clear in the mind of the nurse, the social worker, teacher, and convalescent home, the fact that the children under observation in a cardiac class do not all have serious organic heart disease, and that only the Class III. cases really need restriction of their physical exercise. In the early days of the cardiac classes it was a very common experience to find a child with a functional murmur who had been warned not to run, nor walk up stairs, to say nothing of the injunctions against "red meats" and even "acid fruits." When this classification was made it was felt that all children who showed any symptoms whatever due to the heart should be given extraordinary care, and that there are so many degrees of symptoms that differentiation into sub-classes would be difficult or impossible. After trying this classification for three

years it is evident that there would be some advantage in having Class III. further sub-divided into cases with mild and severe symptoms; or into cases which have at some time actually decompensated, and those which have never had a real break.

OBSERVATION

After the diagnosis of heart disease has been made upon a child, he should be under continuous medical observation. There is no other disease for which this is so absolutely essential. The child must therefore be under the care of a private physician, or else some means must be devised for providing this observation by clinics. In the past, the treatment of cardiacs in Out-Patient Departments has been casual, unorganized and unsystematic.

The class method of treating patients with tuberculosis, malnutrition, and so forth, has proved definitely that this is the only way of handling large numbers. The saving of time of doctors, social workers and nurses, is alone enough to justify this plan. The class idea for the treatment of cardiacs has only come forward in recent years. Lucas had a cardiac class for children in Boston in 1912. Guile started a cardiac class for adults at Bellevue in 1911. Ferguson began the group study of cardiac children at Bellevue soon after. In 1916, a class for children was started by St. Lawrence in St. Luke's Hospital. At about this time a group of physicians conceived the idea that the cardiac movement was large enough to warrant the formation of the Association for the Prevention and Relief of Heart Disease. Largely under the stimulation of this Society, cardiac clinics were started in numerous other institutions, and in 1917 the Associated Cardiac Clinics were organized with a membership of fifteen or twenty. Today there are thirty cardiac classes for adults or children in New York City, with over 3,000 cases under observation. Meetings of the Associated Clinics are held three or four times a year and public meetings of the parent Association two or three times a year. At these meetings most interesting papers and discussions have been presented, and the procedure in the cardiac classes has been standardized to a considerable extent. The cardiac classes have been developed in many institutions to a state of very high efficiency. Most of them have full time social workers.

A CARDIAC CLASS

The class in which I am especially interested is that supported by the John Huddleston Memorial Fund at Bellevue Hospital. This foundation was established in the fall of 1916, in memory of Doctor Huddleston, who was contemplating this work at the time of his death. It made possible the reorganization of the cardiac class which had been in existence for two or three years. Over 500 children have been studied; about 360 were under observation last year, including

Organic heart disease, acquired.....	135 cases
Organic heart disease, congenital.....	20 cases
Possible	120 cases
Potential	83 cases

In conducting this class, four general principles are kept constantly in mind; first, diagnosis and classification of cases; second, the care of the cardiac condition itself; third, the care of the child's health and nutrition; fourth, the removal of portals of entry (care of the teeth and tonsils).

After the diagnosis and classification have been made, it is necessary to decide just how much attention need be paid to the heart. Children with decompensation or with severe symptoms on slight exertion require bed care. The hospital is the best place for this, except in the case of a very nervous child, whose home conditions are such that proper care can be given. This requires an unusually intelligent mother, and frequent visits by the clinic nurse or doctor. Excellent results can be obtained at home under proper supervision.

THE QUESTION OF EXERCISE

A great many children with heart disease require little restriction of their exercise. They can run and play and lead normal lives. This is true also of practically all of the "possible" ("functional") cases. The majority of the children with organic disease lie between the severe and the very mild cases. The exercise which each child may take, and the amount of rest he needs must be decided for each individual case, and must be definitely prescribed. Written directions should be given for the daily routine and for the amount of rest and activity advised. Most of these children are

able to be up and about—and can walk easily—but few should run far or climb stairs rapidly. Children who have lesions of a degree to give symptoms on exertion, are urged to stop after each flight to rest until they breathe normally, not to run, not to play violent games. It is difficult to control the amount of exercise taken, for such children naturally want to do all that their playmates do. Those with little cardiac reserve soon learn how much they can do without discomfort. It is certain that too much restriction has been put upon many children in the past. Nearly all our children attend school, climb stairs and even run a little with no ill effects.

We have found no simple and easily applied functional test for cardiac efficiency. How to measure the exercise tolerance is at present one of the greatest needs. We have tried various tests, the change of pulse rate after exercise, change of pulse and blood pressure on change of posture, and Barringer's delayed maximum rise in blood pressure. All of these give useful information at times, but occasionally are misleading. The rate and size of the heart, the character of the apex impulse, and the general aspect of the child before and after mild exercise, give a fairly good impression upon which advice may be given.

IMPROVEMENT OF NUTRITION

The third object of the class is to improve the general nutrition of the children. It is believed that this is the best means in our possession to combat the problem of heart disease. It may not be desirable for adult cardiac patients to put on too much weight. A growing child offers a different problem, however, for his heart grows with his body. It is only by improving his general nutrition that we can insure that the nutrition and growth of his heart muscle will be improved. It is an easily determined fact that many children with heart disease are undernourished. In the Huddleston clinic fifty-five to seventy-five per cent of the children are underweight for height and age on admission. It is a matter of common observation that improved heart action goes with a good gain in weight; also children whose hearts do badly rarely gain or grow normally.

The methods used in attempting to improve the nutrition are those already described in the reports of the Huddleston Class, as

they have been developed in this class and in the Nutrition Class at Bellevue.¹ The regulation of the hygiene and diet of the child is the prime object, for if a child can be made to eat proper food and live a life correct in its hygienic details, he will be healthy and will gain and grow, provided he has not too serious an organic disease. The correction of the hygiene is no simple matter in a city like New York. Poverty, ignorance, poor food, bad racial habits of living, bad housing, crowding indoors and out, late hours, insufficient light and air, all contribute to the difficulty. Lack of co-operation from the parents may be due to failure to comprehend directions either through the lack of intelligence or on account of the the bar of language. The habits of life of many of the children are at fault in almost every single detail, and must be corrected in so many ways that one scarcely knows where to begin, yet no results will be obtained unless these habits are all corrected.

Special verbal and printed instructions to each child and parent, and class talks to groups of children are the chief means of education available. The rivalry of class competition, weight charts, and prizes are used to stimulate children to try to gain. Constant repetition of the health lessons is required, for the children relapse into bad habits unless they are watched carefully. Home records kept by the children are useful in checking their habits. The application of all these methods gives results. The average gain of the children in the class is somewhat higher than the expected rate for the different ages. In other words, heart disease does not prevent us from improving the nutrition of these children.

REMOVAL OF PORTALS OF ENTRY

The teeth of each child are inspected at every visit. We have a dentist in the next room who attends to the smallest cavity.

The question of tonsillectomy comes up in every cardiac. We believe that every child who has had a rheumatic infection should have his tonsils removed, provided he is in a condition to stand the operation. If his heart is not doing well, or if he is very much underweight, it is better to have him sent to the hospital, or even send him to a convalescent home for a few weeks before it. There is usually a loss of weight after the operation, and when a child is

¹ American Journal of the Diseases of Children, June, 1918, xv, 373.

at low water mark, the shock and loss of weight often strike a blow from which he recovers with difficulty. We also keep every cardiac in bed in the hospital six to ten days after the operation. We have definitely shown² that this does much to lessen the loss of weight, and that the weight lost is regained much more quickly.

CONVALESCENT HOMES

When the nutrition cannot be improved at home, the children are sent to convalescent institutions. We have been most fortunate in having the Pelham Summer Home at our disposal, except for a few months in the winter of 1918-19.

Five years ago there were but one or two convalescent homes in the vicinity of New York City which were willing to accept cardiac patients. There existed in the minds of the managers of most of these homes a vague feeling that the child ill of heart disease might drop dead or that he was likely to become a bed patient and so was not a fit case for their care. The Burke Foundation, and the Campbell Cottages at White Plains and the Pelham Home were among the first to realize that this stand was not a proper one. These institutions have shown plainly that cardiac patients, if properly selected, can be given convalescent care with great benefit to themselves and without an undue burden upon the institution. Following their example, and under the stimulation of the Association for the Prevention and Relief of Heart Disease, a number of other homes have opened their doors to cardiacs, and several new institutions have been started for the express purpose of taking heart cases only.

The experiment of the Pelham Home has been under the immediate direction of the Huddleston Class and the experience there has brought out a number of facts of importance. The bed patient, the patient decompensated or in danger of decompensation should not be sent to an institution of this kind. These are hospital cases and should be kept in hospitals or in chronic cardiac homes. The convalescent home is not as a rule equipped to take care of a large number of bed patients. The type of patient who does best in the convalescent home is the one who has a moderate heart lesion, and whose nutrition is impaired either as a result of the heart disease

²New York State Medical Journal, May, 1919.

or of any other cause. Cases must be selected with care. It is absurd to send away a fat rosy child with a functional murmur, who happens to be a pet of the doctor or social worker. No children should be sent with acute joint symptoms, nor for two or three weeks after these symptoms have subsided, nor with acute chorea, since these may do badly and need separate hospital care. The teeth must be put in order, and the tonsils removed if the patient is fit for the operation. There must be no pediculi, vaginitis, open tuberculosis, or other contagious disease. The mental qualities of the child must be considered, for it is unwise to send away mental defectives, degenerates or even badly spoiled or very nervous children who rarely profit by leaving home.

It has been found that it is best to keep the children at Pelham Home for as long a time as possible. It can be decided as a rule in a week or two whether the child is likely to do well under existing conditions at Pelham. Homesickness, refusal to eat the food provided or recalcitrance to the rules show that certain children will not profit by a stay and they are sent home after a fair trial. The children who improve are kept for several weeks—even for two to six months. The routine in the home is simple. Regular hours, wholesome and abundant food, a rest after lunch for all, short walks on a level road for the children who are fit to exercise, and rest all day on the veranda for the more severe cases. The children rarely gain in the first two weeks, but soon thereafter begin to gain rapidly. The improvement is often astounding. The rate of gain in weight in children who stay longer than a week or two (*i. e.*, suitable cases) averages four times the expected rate for the different ages. The adolescent girls have gained at the average rate of forty pounds a year; girls under twelve at about twenty pounds a year.

After the return from convalescent homes, there comes a critical stage in the lives of these children. The return to their old home surroundings all too frequently means a return to unhygienic living. The weight gained in the hospital and convalescent homes may be lost in a few weeks. A small loss is not necessarily serious for there may be a little surplus fat—but unless care is taken, and unless every effort is made to continue the good habits of eating, resting, sleeping and so forth, the permanent improvement hoped

for will not be attained. These children should report each week with their mothers, and every effort should be made to retain the weight gained which is one measure of improvement.

The connection between the convalescent home and the cardiac clinics has been kept closer by special cards which have been provided by the Associated Cardiac Clinics. One-half is filled out by the clinic in referring the patient to the home. It gives the diagnosis, classification, amount of exercise advised, with the other necessary facts. The home is supposed to fill in the weight on admission and on discharge, co-operation, progress, length of stay, advice given on leaving, and to return the card to the clinic.

HOSPITAL CARE

In the past the cardiac has been kept in the hospital only for the shortest possible time. He has been discharged as soon as the urgency of his symptoms abated to such a degree that he has been able to get out of bed. Milder cases have been discharged as soon as the staff has made a diagnosis and become tired of listening to the murmur. The result has been that the cardiac has been the most notorious of hospital repeaters. We have found that one long stay is much better than several short ones, and often keep the patients for many weeks, or even months. They are then discharged to a convalescent home if they are suitable cases, and thus the period of rest is prolonged so that the patient gets as far as possible away from his acute decompensation. The results under this plan are often astounding. The child who comes into the hospital on the verge of a severe decompensation, after a stay of one to three or four months, is sent to a convalescent home for three or four months more, and comes back so much improved in general appearance, color, nutrition, and above all, in heart action, as to be scarcely recognizable as the same child. Gains of fifteen, twenty, even thirty pounds are not uncommon.

CHRONIC CARDIAC HOMES

There is a group of children with badly damaged heart valves and muscles who are just able to be up and about part of the time, yet who are exhausted by very mild exertion. Coming to the clinic is about the maximum effort which they can stand, if they can do

even this. Such cases are almost hopeless—and the main object with them has been to keep them happy. They are urged to rest a great deal, which indeed, they are forced to do by the severity of their lesions. They spend a good part of each year in the hospital or convalescent home, and are the cases which die of heart disease in a year or two. What they need is a chronic cardiac home, a haven of refuge in which they may be made happy and as comfortable as possible while they live. They are not fit cases for the regime of the average convalescent home for these homes are not equipped for bed patients. If we had chronic cardiac homes, the lives of these unhappy children might be prolonged and made fairly comfortable. Many of them live on for years and could be educated and taught light occupations which would keep them busy and perhaps even help in their support. This is a field which has not been opened up as yet. It is hoped that some of the institutions for convalescent cases can be induced to open cottages for chronically disabled children. They certainly deserve more care than they are given at present, for the hospital ward is the only place for them, and they cannot be kept in hospitals indefinitely. They are the most pathetic children in the world today, and their patience under suffering wrings deep sympathy from the hearts of everyone who comes in contact with them.

EDUCATION

The education of the cardiac child offers the greatest difficulty. The amount of absence from school of the children whose hearts' function has been impaired, is greater than that of any other group. The question of special school classes for them is one which is being tried out at present in several schools and institutions in New York. Each of these school classes is in close connection with a cardiac clinic. They have shown definitely that the children do very much better than in the regular school class and that absences are much reduced.

Opinion is not unanimous as to the necessity for these special classes in every school. Surveys of certain schools have shown a definite percentage of cardiac cases, but most of them with not enough impairment of function to prevent their attending a regular school class. There are, of course, many cardiacs who cannot climb

stairs and who need a ground floor class-room, or one reached by an elevator. There are not enough of them in most schools to require a special class room. It is probable that there should be such a class room in every second or third school, that is one in each neighborhood which could be reached without too long a journey. The large majority of cardiac children can climb the one or two flights necessary to reach their school rooms. If necessary, special consideration can be given them by the teacher. They need not march in line with the other children, nor in fire drills, but should be allowed to go slowly upstairs and rest as much as they choose. A few children in our cardiac class climb stairs once a day, taking their lunch and coming down at noon. Some children are given a longer noon hour. If a child is not able to climb one or two flights of stairs slowly each day, it is probable he is not fit to be in school at all, but should be in a hospital or convalescent home until his condition is improved. There should also be provision for teaching children in the hospital and convalescent homes because they are nearly all much retarded, and should not be allowed to lose more time. The Board of Education has also a few visiting teachers who go into the homes of the children who cannot come to school at all.

The education of the cardiac child of course must not stop with his ordinary school training. He must learn many things not in the books; he must learn in the first place that he has a handicap, that he has a weakness, and what he can do and what he cannot do with safety. There is a good deal of criticism of the cardiac clinics on the ground that the children become self-conscious, and feel that they are different from other children. This is all too true; the unfortunate cardiac child is different from other children and the sooner he learns it, and what he can do with safety the greater is his chance of living a life in comparative health and comfort. He must learn how much physical exercise he can take and beyond which he must not go. He need not be made a hypochondriac, however, and cardiac clinics can do much to dispell the gloom and hopelessness which is commonly instilled into the cardiac child by his anxious parents, friends, teachers, and even by his doctor. In addition to this lesson, he must learn the value of rest and of long hours of sleep, of fresh air and cleanliness, regular hours of eating and diet, and all the other laws of health. The average child pays a

penalty for breaking any one of them. Their slightest infraction may spell disaster to the cardiac child.

The education of the parent is just as important, perhaps more important, than that of the child. Especial care must be taken to make very clear to these parents that their child is handicapped and requires unusual care, and that they can only keep him well, by helping him to learn his lessons of habit and hygiene; but that he must be saved from self-pity, and kept cheerful and hopeful.

The education of the physician in matters relating to heart disease has been far from adequate. It is not sufficient to teach medical students about murmurs and digitalis. They must learn that a cardiac patient is a child and must be treated like a child, not like a case with a heart murmur. The special cardiac clinics offer an unusual opportunity for medical students and graduates to become thoroughly familiar with the whole problem and with the various types of heart disease. Besides the instruction given the undergraduates and the internes in the Huddleston Class, we have graduate students, many visiting physicians, social workers, nurses, undergraduate nurses and volunteer lay-workers, all of whom profit by the opportunity for observation of the material and the methods shown.

The education of the public, which includes the authorities of schools and hospitals, and the city and state governing bodies, must also be considered, for a program cannot be laid down nor carried out without co-operation and money. Public opinion has to be formed by much discussion before city fathers can be induced to make appropriations. The Association for the Prevention and Relief of Heart Disease* has made a small beginning in this direction. It is a small society as yet, and needs members and funds to enlarge its work. With a very small annual expenditure and the services of an executive secretary and stenographer, a great deal has been accomplished in New York and in other cities to some extent.

The formation of most of the thirty cardiac classes in New York has been largely due to the stimulation given by this Society. An office is maintained where all sorts of information pertinent to the subject is collected and made available for reference. Thou-

* 325 East 57th Street, New York City.

sands of leaflets have been printed for distribution to doctors and patients. A survey has been recently made concerning the work in all the cardiac clinics and deficiencies have been pointed out in social service and other directions. The office acts as a clearing house for admitting patients to certain convalescent homes, which receive cardiac cases, largely due to its influence. New members will be very welcome, either individuals or institutions.

VOCATIONAL TRAINING

At present the provision for vocational training of cardiacs is limited. It must be expanded so that each child can be taught a light or sedentary occupation which he can undertake with safety. It is probable that it would be better to spend most of our effort in arranging to have children enter existing occupations than to try to teach any new or any single occupation to a large number of cardiac children. A good deal of headway has been made in this direction in New York through the Bureau for the Employment of the Handicapped which places many cardiacs in light occupations every year. There is still a big gap to be filled, however, in the placing and supervision of children during their first working years.

The solution of the cardiac problem has been barely begun by the means described in this paper, and many aspects remain untouched.

There are many points of similarity between the tuberculosis and the cardiac problems. The analogy between the two is fairly close. Both are usually contracted in childhood or early adult life. Both may lead to a rapidly fatal result, but commonly go on to a chronic stage with attacks of acute symptoms. Both incapacitate the patient for much or perhaps all of his former activities. Both are the cause of tremendous economic loss to the community and compete for first place in the list of causes of death.

What is the keynote of the whole program of the care of the tuberculosis patient? As soon as the diagnosis is made he is told that he must go away to a sanatorium and must stay there for three, six months, a year or even two years, in order to arrest his disease, and that he must lead a most careful life thereafter.

At the sanatorium he is taught what rest means; what to eat and drink, and wear, the importance of sleep, fresh air, cleanliness,

and of regular bowel function. He learns just how much exercise he may take and what kind is best for him. He learns all the laws of hygiene and health, especially those which have a bearing on his particular disease. He is also advised as to his life after leaving the sanatorium; what kind of work he may do and how to take care of himself after going back to work.

In brief, the tuberculosis sanatorium gives two things, the cure, and education for future life.

Where does the cardiac patient get these things? There is no question but that he needs them both. The cure which he needs is but little different from that given the tuberculous. Rest and more rest, sleep, food, and fresh air, graduated exercise under medical supervision—practically the same essentials. He needs even more the education for life after graduation from the sanatorium, for a patient with an arrested tuberculosis may do many things which would mean disaster for the cardiac.

Would it not be better, then, to make some sort of sanatorium treatment for heart disease, the keystone of its care?

Early careful diagnosis would be an essential to this plan, and after this it should be possible to give the patient a chance, perhaps his only chance, to put himself in the best condition to handle his handicap for the rest of his life. In the past we have been compelled to wait until signs of failing heart muscle have given us an excuse to admit patients to hospital wards, or to be content with short periods in convalescent homes where the care still leaves much to be desired. If it were possible to send the cardiac patient at the very outset of his trouble to an institution built and conducted on the lines of our best tuberculosis sanatoria, with special adaptations to the differences of the two diseases, who can foresee the tremendous difference in the outcome which would result for the large majority of our heart cases?

DISCUSSION

Dr. Hugh McCulloch, St. Louis: It gives me much pleasure to follow Dr. Smith in the presentation of his subject, particularly as I am so heartily in accord with what he says and does in his actual work. He has made it rather difficult for me to say anything further because he has covered the subject so well in every detail. I would like though to emphasize, as he pointed out, the analogy between heart disease and tuberculosis in children. The control of the two diseases has many aspects that are similar and many

principles in common. Many times the recognition of heart disease in a child has the same significance to a physician that the recognition of tuberculosis would have had fifteen years ago. At that time tuberculosis according to the popular mind, was regarded as applying to an individual who was so advanced as to be spitting up blood and lung material and was considered likely to die at any time. A similar conception of heart disease must be removed from the minds of both the laity and the medical profession. Educational propaganda must be carried to both groups and I know of no better material than the facts and ideas Dr. Smith has presented this afternoon. The large number of cases that exist in all localities throughout the country must be pointed out, and the necessity for recognition of heart disease in its early stages before it has developed to a stage of cardiac failure, must be particularly emphasized. But to prevent heart disease we must go further than early recognition. We must attack those conditions which we feel are contributory factors in the production of heart affections, throat infections, chorea, arthritis, etc. Such conditions must be watched and cared for in the pre-school as well as the school age.

In treating our cardiac children our efforts should consist of corrective and protective measures for the heart. We should attempt to correct such injury as has been done and to protect against further injury. In our Cardiac Clinic at the St. Louis Children's Hospital we feel we have made a beginning, but we have barely scratched the surface of the problem. We have not been able to carry out the work to the extent that has been done in New York.

Dr. William Palmer Lucas, San Francisco: I only want to bring up one question, that is, how shall the heart be evaluated in these cardiac cases? What is the potential capacity of such hearts? I agree with everything Dr. Smith has said. He hit the nail on the head when he said it was a question of educating the child in the life he had to lead. Everything else is simple compared to the educational side of the child and getting him and his family to understand it, but the thing we must understand also is the evaluation of the heart, that is, how to tell how much exercise some hearts can have and how much, others can have. We are working out functional tests for the kidneys and for the brain, and there is no reason why we should not work out similar tests for the heart. There are some, but, to my mind, up to the present none of them have been satisfactory.

Dr. Gustave Lippmann, St. Louis: This subject is of especial interest to those of us who are practising in cities, where we all find children who should be receiving an education but who are not in any condition to do so. We cannot allow these children to go to school, partly because as a rule the higher the grade they are in, the higher the room in the school building. I have been trying to get some of the schools to do something, but they all answer that there are not enough of these pupils to make it necessary.

Then comes the question of transportation. If we could get together and do something for these semi-invalids we could accomplish something. I have seen these children with tears in their eyes because they could not go to school as their schoolroom was on the third floor. The educational people have not been told enough about this problem, and I think it is the duty of this society to get in touch with the departments of education everywhere and persuade them to make the necessary provisions so that these children can be sent to school.

Dr. Charles Hendee Smith (closing the discussion): There are so many sides to this cardiac problem that it is useless to ~~try to cover it in a short paper, or to discuss it in a limited time.~~

As to a functional test I agree with Dr. Lucas that we are still without a satisfactory one. How much exercise can a given child take? So far I have been unable to answer that by a definite, scientific test. There are all sorts of tests for blood pressure, but the trouble is that most of these cardiac children, except the greatly decompensated cases, have hearts that respond to exercise almost like a normal one. The answer is that the cardiac child can ~~do things~~ almost like the normal child. His response to mild exercise, his apex impulse ~~and pulse~~ give us the answer better than any scientific test which has been devised so far.

We discharge the children from the Convalescent Home when they have obtained all they can get out of that home. If a child is still gaining we do not discharge him; if he does not gain he must give place to some one else who will gain in the home.

The school question is another one about which we will be talking for many years. Personally, I think most cardiac children who are fit to go to school at all can climb three flights of stairs. They can climb slowly once a day, take their luncheon, and come down at night, and if they cannot do that they are not fit to be in school at all. The education of the children who can not go to school must go on in the chronic cardiac homes and convalescent homes and that needs special teachers.

The Association for the Study of Heart Disease is a new organization. The Red Cross is printing a lot of literature for them and they have done a great deal for this heart work. When you consider that there are thirty classes in New York City you get some idea of the extent of the work that has been done in this direction. I may be slandering some of the other cities, but all that we have information about elsewhere is one or two classes in Boston and two or three in Chicago and St. Louis. I tell people the class method is like a funnel. An ordinary clinic may be compared to a sieve through which the children pass in many separate streams, none of them of any size, but when you collect those children into classes you get the effect of the funnel, and the facts which are discovered in this kind of work help the problem along a great deal.

THE ECONOMY OF PREVENTIVE MEASURES IN THE NUTRITION OF OUR SCHOOL CHILDREN

LUCY H. GILLET

Association for Improving the Condition of the Poor, New York City

Because we have realized so forcefully the value of physical strength and mental ability in a great crisis such as we have passed through during the last few years, our attention is focused upon the problem of health. We are all agreed that nutrition is one of several causes to be remedied in looking toward a better physical condition, but since the relationships between the various factors contributing to health are such that it is hard to think in terms of one without including the others, we shall speak of nutrition in a very broad sense.

Today we are realizing as never before that the power and wealth of a nation lie not only in the intelligence of its citizens, but also in the health that enables them to make best use of that knowledge. Yet the conditions under which we are living are growing more complex, and more difficult to maintain a normal standard.

We are told that in the country where we naturally look for the most favorable conditions, health is at a lower level than in the city. Statistics show that there are more than twice as many children with defective nutrition in the country as compared with those in the city. This may seem strange but upon further inquiry it is found that the people in rural districts are not making proper adjustments to changing economic conditions. Where fifty to seventy-five years ago each farmer had a small tract of land and raised much of the food for his own family, he now specializes and is thus deprived of some of those things so essential for health. If he raises cows as a means of earning his living, he sells the milk, cream or butter, and has very little or only skimmed milk for his own use. In the city there are the immigrants who in coming to this country have left a land where they lived in the open. They

now congregate in congested districts, with six or seven or more sleeping in one room. In their own country, fruits and vegetables have been abundant and inexpensive. Here the prices seem so high that they are considered luxuries and when they have to economize, they omit the foods that have helped to protect them from disease.

Cross section surveys of the physical condition of our boys and girls bring us face to face with the fact that the various factors contributing to defective nutrition put from 15 to 25 per cent of them below the average in weight, and since they may be at or above average weight but below in resistance, weight must be considered as only one index to a low standard of health.

In the recent war, the men found to be in poor physical condition were rejected as unfit to meet the test. Our children have before them a great test also—the test of thinking out and living through the plans for the future of the country. Now—not twenty years hence—is the time to inquire whether they are being properly prepared.

We have long ago seen the need of and the benefits to be derived from compulsory education. Every child must meet certain educational requirements. They are not merely examined to find out how much they know, neither do we send home to the parents word that the children must be taught how to read and write. We have discovered through experience, that children must be required to learn certain fundamentals for the good of the country, and we have developed an educational system to provide such information for all children.

The child that is below par physically can hardly be expected to make best use of these intellectual advantages that are offered him. There is evidence that mental retardation may sometimes be the result of malnutrition. In one specific instance the teacher of a boy of ten remarked that he had risen from the foot of his class to third place in a few months time. It may be a coincidence, but it is interesting to note, that during those same few months some very poor nutritional habits had been corrected.

It is known that *most* physical defects, and all nutritional defects arising from poor nutritional habits, may be corrected. Yet

we are paying taxes in support of an educational system in which one-fourth of those we hope to benefit are known to be poor risks. This obviously involves waste of time, energy, and money, when that time, energy, and money are spent in such a way as to get less than a maximum return for the investment.

During the past years there has been a great awakening of interest in the defective nutrition of children. Much is being done by both public and private agencies in trying to overcome the condition wherever it exists. I quote physicians as saying that it is now believed that many, if not most of the diseases of adult life originate in childhood. This statement together with a recent report of the Committee on Industrial Relations give a faint conception of the importance of these preventive measures. The report referred to says that there is an average loss through sickness for each of the thirty million wage earners in the United States of nine days a year. With wages even at \$3.00 a day this means a loss of over \$800,000,000.00 a year in wages alone. This does not include doctors' bills or relief given. Neither does it tell what it means in terms of yet greater losses such as decreased output, the quality of the work done, the health and stamina of the next generation, the hindrance of progress, the problems of society, human suffering, and the decreased joy of living. Development of resistance in childhood and *prevention* of conditions that lay a foundation for disease should receive attention in any civilized community and the curative measures now being used are looking toward this end. If effective, they should help to decrease these losses, but they will do more, because there will not only be less loss, there will be greater production.

We have been speaking only of the 25 per cent of our children already affected. Can we count on the 75 per cent who are now in good condition as remaining so? It almost seems as if health had been considered a game of chance. In the very near past, and even now in too many localities, we have waited until the child begins to lose weight or is actually in bed before considering health important. When we see health failing we try to recall it, but too frequently the call comes too late. When data have been collected showing the cost of curing conditions that have been allowed to

develop instead of preventing these same conditions, when we are able to measure the amount of accomplishment actually lost before the child is in bed, we shall begin to realize the value of physical examinations and of education in establishing good habits. The work done in preventing yellow fever, typhoid, and other contagious diseases shows what a great saving of life and efficiency may be accomplished by keeping people from getting sick.

Defective nutrition is an unnecessary evil. We must prevent the healthy children from becoming physically handicapped. There are the well known physical defects—the teeth, tonsils, adenoids, etc., which may be corrected. Then the regulation of rest and exercise, sleep, fresh air, cleanliness, correct habits of breathing, sitting, standing, good food habits, and other health habits are all matters of education. Many children are treated and allowed to act as though they had the strength of grown ups. They observe late hours, they work and play beyond their strength, thereby using energy that should go into growth and resistance. They are allowed to eat sweets at all times of the day and quantities of them.

Children get up late, too frequently go to school without breakfast or eat one consisting of coffee and doughnuts. Many of them go to the corner grocery or the confectionery store for luncheon, or if they go home they bolt a scanty luncheon or wash it down with strong tea or coffee, and hurry back to play vigorously until the bell rings. They visit the ice cream vendor, the fruit dealer, the corn roaster, during the hours after school, and want no supper or only a dainty one. They use up their reserve energy, then comes lowered resistance, frequent colds, tuberculosis, and other conditions needing medical attention.

All these habits are subject to change through conviction and education. Normal parents want their children to be taught to be healthy when convinced what inattention to health means. They also realize the greater effectiveness of the teaching from a source outside the home. Children want to be strong and healthy—at least they like to win in any game—and the game of health appeals to children. Their interest is easily gained if properly approached. Competition is frequently all that is needed. A failure to measure

up to certain standards will be due mostly to ignorance of the laws of health and a lack of appreciation of what health means. We have known several instances in which boys have asked the nutrition worker how much and what they should eat and how much they should rest to prevent loss of weight when the outdoor games are revived in the springtime. The majority of our children and their parents do not know the way to health—neither do they know the dangers of neglecting health. Every mother should be taught that good food, good habits, and good living conditions help to develop a state of nutrition that builds resistance to disease.

A common error is to attribute this condition to low incomes, but it has been found that poverty plays a very small part in the poor nutrition of the majority of children, and that most families are spending enough money to provide sufficient nourishment if that money were spent to good advantage. It is not unusual to find a hurried and insufficient breakfast in the homes of the well-to-do. In a community in Wisconsin where mid-morning lunches were served it was found that the children coming from homes where economy was not necessary, improved more than those of families of limited means. In such families it is not unusual for children to arise too late to eat any breakfast or to eat hurriedly only a very small amount of a dainty but far too limited breakfast. No breakfast, or bread and coffee, or fruit and a slice of toast cannot maintain growth and build resistance in childhood. Neither can anyone deny that these conditions are remedial.

After an inadequate breakfast children are unable to do the work expected of normal children. They are restless, nervous, fatigue easily, fail to concentrate, are called lazy; they are nagged and scolded, or coaxed and bribed; they get discouraged and in such an indifferent, subnormal condition, it is much easier to get into mischief than to rise to the impossible heights of the teacher's ideal. Adults who have felt the revivifying effects of sleep, food, exercise, or fresh air should not find it difficult to understand the mental state of children habitually weary because of neglect of proper habits. It is difficult to control such children and the teacher in charge is exhausted in her efforts. She has used valuable energy in tasks that ought to be prevented. If it is of benefit

to remedy defects, how much better would it be to prevent them?

There are some factors difficult to overcome—especially through education—such as lack of sympathetic understanding of children by parents, or mother working, or insufficient income because of illness of wage earner, but such causes, while they should not be overlooked or neglected, are in the minority, and are individual problems. The majority can be reached through groups and no place is so well adapted to do this work as the schools, where every child goes for five days a week during the school year. There must be education of the masses of children and parents, school officials and teachers. The school officials should be made to realize the seriousness of the situation, and teachers should be instructed in preventive measures, children must be interested, and parents must co-operate.

A few minutes a day devoted to the teaching of health habits as a regular part of the school work would mean much in preventing a state of nutrition that leads to disease. But the home conditions as a part of this problem must not be overlooked—if the results are to be permanent. The child must be stimulated but mother must co-operate. The mother may be willing but unable to adjust her home life. She may not see her way clear to getting the children to bed early; she may not know how to plan meals suited to the needs of both adults and children and yet she cannot afford to buy separate dishes; she may not know how to make \$15.00 which if spent wisely will provide sufficient nourishment for the family, do its maximum amount of work. In one instance a mother for whom the doctor had ordered special nourishment, confessed to a nutrition worker that while she told the doctor she was following his directions she wasn't because the children would have to go without food if she bought special things for herself. In this case, the family income was sufficient for the needs of both the mother and the children when readjusted. This was a whole family budget problem and an individual one that could not have been handled en masse. There are many of these problems where home conditions must be adjusted before there can be satisfactory results. Neither is it enough to provide a mid-morning or noon luncheon. The other meals and health habits must be emphasized

as well. The child must realize that for any gain to be permanent, good habits must be continued—not for six weeks or six months—but for a life time. The formation of good habits is like learning the multiplication tables. They must be repeated for months until responses become automatic. For those cases with individual problems, if the schools cannot handle them, there are individual agencies established, most of which will be glad to assist in such work. Every agency now coming in contact with families should emphasize good habits and furthermore all should agree as to what those habits should be. Conflicting advice gets us nowhere. A Central Bureau of Information might be found useful for social agencies.

Perhaps there could be no better influence in the teaching of health and good nutrition than for every teacher to be a living example and a firm believer in health. The remarks that find their way back to those of us who have been trying to influence the habits of children are numerous enough to convince us of the importance and truth of the old saying, "Precepts are better than preaching." One day a healthy and good-to-look-at worker was trying to impress upon the mother the injurious effects of too much coffee and late hours. As the mother listened to the words of advice she noted the wholesome good health of the speaker, and asked her if she drank coffee. The negative answer made the mother vow that her children should have this chance for health also. The next day she confided to another visitor that it was Miss B's red cheeks that persuaded her. Whether the conclusions were justified the results were all that could have been desired as the children had no more coffee and were put to bed early.

An outsider frequently has more influence than the mothers. Mothers in the homes of the rich and those of limited means have said this. Whether the schools shoulder the whole responsibility or not—they are much needed as an ally to the homes. Methods must be adapted to group work and the message made more personal. Too much of our teaching is abstract with the result that school and practice are two separate considerations. As one group of girls said, "We have had all this in hygiene in school, but it never occurred to us that it had anything to do with our being underweight." We shall have to know how to teach what we know in a very impressive manner.

We are stressing the importance of the education of our school children so that defects may be corrected. We are beginning to realize that the pre-school children now in good condition should enter the schools ready to begin at once to make best use of the educational opportunities offered. The easiest place to dam a river is at its source; the easiest and most economical way to overcome defective nutrition is to prevent it entirely.

I was asked to talk about the children of school age, but I can hardly close such a paper without mentioning a very important factor. Much defective nutrition develops during the pre-school years. Physical defects may exist for several years before detection. These defects so interfere with nutrition that even the best of habits could not develop good resistance. How infinitely better it would be if all defects could be detected and good habits established in infancy so that every child would be given the best chance possible. Many mothers and fathers boast that their children, two and three years of age, eat the same things that they do. We have all seen these toddlers in the street with watermelon, cucumber, pickles, ears of corn, candy and green apples, their pale faces and listless eyes bearing witness to the truth of the above statement.

There is nothing new in these few ideas. We all realize the need of health for good work and of work with the pre-school child, but it is only by constant reiteration of the facts that we arouse a public conscience. We must repeat it so frequently that everybody will be stimulated to take some responsibility in giving every child a fair chance in life. A full program to accomplish this will mean much determination, work, and money, but the amount of any one of these spent will be insufficient compared with the loss to the community either in dollars and cents, or in the health and happiness that will follow as an inevitable result of inattention to the problem. We want a public opinion standing so strong and firm for the highest ideal that everyone will work for its accomplishment, for the clearest minds in the healthiest bodies are needed now as at no other time.

DISCUSSION

Dr. Gustav L. Kaufmann, Chicago: Many of the defects we found in children are due to the apathy of parents or to their lack of control over the children. If you tell the parents that Johnnie has heart disease they are at

once interested. If you tell them that Johnnie is underweight they say, "That's too bad," and shrug their shoulders. As a preventive measure I think it is due the parents that we talk to them about the significance of these things before the children develop these defects.

Dr. Ada Schweitzer, Chief, Division of Infant and Child Hygiene, State Department of Health, Indianapolis: The problem of poor nutrition in children in many cases dates back to improper feeding in infancy. I believe that when Dr. Sedgwick's campaign for breast feeding has become popularized we will have fewer poorly nourished children in our schools. Children who have been artificially fed on prepared foods get a depraved taste and do not care for plain cow's milk, or other plain foods. Often they are physically unable to tolerate certain proteids and physiologically readjustment becomes necessary before adequate assimilation is established. Successful maternal nursing will prevent many nutrition problems of later years.

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VITAL AND SOCIAL STATISTICS

COMMITTEE

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THE EFFECT OF INFANT MORTALITY ON THE AFTER-LIFETIME OF SURVIVORS*

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Professor Karl Pearson first attempted the measure of the relative strength of nurture and nature by statistical methods. By careful analysis of a large mass of statistical data he has attempted to demonstrate that nature is a more powerful influence or factor than nurture in the development of human character. Pearson has attempted to measure or to statistically prove what Galton in his Hereditary Genius had stated to be the fact, namely, "When nature and nurture compete for supremacy on equal terms, the former proves the stronger." The Galton Laboratory in its various publications has attempted to give quantitative definiteness to this fundamental conclusion of its founder.

Among other statistical data used by the Galton Laboratory have been mortality statistics and particularly the comparative mortality of infancy and the immediately subsequent years of life. Attempts have been made to determine the correlations between varying infant death rates and the death rates of the survivors in the second, third, fourth, etc., years of life. Pearson and Snow profess to have found very definite evidence to the effect that a high infant mortality is correlated with lower than average or normal death rates in the subsequent years of life of the survivors and similarly a low infant mortality is correlated with higher than average or normal death rates in the subsequent years of life of the survivors.

On the other hand Dr. (now Sir) Arthur Newsholme in his reports as Medical Officer to the Local Government Board of England after analysis of a considerable mass of statistical data which had been subjected to mathematical treatment by Mry Udny Yule,

* I am greatly indebted to Mr. Arne Fisher for the mathematical treatment of the Holland data here presented. That part of the paper is wholly the result of his work.

arrived at the following conclusion: "A high infant death-rate in a given community implies in general a high death-rate in the next four years of life, while low death-rates at both age periods are similarly associated."¹ This conclusion the reader will note is diametrically opposed to that reached by Pearson and Snow.

Sir Arthur Newsholme has restated his conclusion very clearly and emphatically in his *Address On Neo-Natal Mortality*, delivered before the Philadelphia Pediatric Society, February 10, 1920.²

"In view of the commonly entertained error that infant mortality may on the balance be selective in character, securing survival of the more robust, it is noteworthy that the parts of England which have the highest infant mortality continue at higher ages to experience a higher death-rate than more favored districts. Any possible elimination of the weakest by natural selection which may have occurred, is accompanied to a preponderant extent by the manufacture of weaklings and by an excessive death-rate at older ages, due to continuance throughout the whole of life of the evil conditions which caused the excessive infant mortality.

"From the economic standpoint attack on infant mortality offers abundant scope for action. Here is a period representing about one-eightieth part of the whole life; but in this period one out of 9 or 10 total deaths occurs; furthermore, the state of health in infancy in large measure determines the health-standard of the whole of life."

This conclusion is the one most of us would like to accept but it cannot be gainsaid that there are some facts which do not seem to fit this conclusion. The problem broached cannot be considered to have been settled until it is settled right, but the heavier burden of proof rests upon the Pearson School which in substance claims that "measures such as those taken to save infantile life can only lead to an increase in the number of unfit persons whom the nation has ultimately to provide for.

As Dr. John Brownlee³ has pointed out after a careful survey of all the writings on this topic:

"The result of the enquiry has been to throw great doubt on every method which has been proposed to measure the influence of the death-rate as a selective agent. Personally I do not see how any accurate information is to be obtained. Experiment, were it possible, might solve certain of the questions, but even where something analogous to experiment has taken place the data are

¹ Forty-Second Annual Report of the Local Government Board, 1912-13, p. 54.

² Published in "Mother and Child," The American Child Hygiene Association, Baltimore, Md., June, 1920.

³ The Relation of Infantile Mortality to Mortality in Subsequent Life, by John Brownlee, M.D., D.Sc., Director of Statistics, Medical Research Committee. Journal of the Royal Statistical Society, London, March, 1917.

rarely presented so as to be statistically useful. For my own part I am very strongly of opinion that the improvement of environment is the most important measure with a view both to the procreation and the maintenance of a healthy race and that no effort can be too great to accomplish this improvement. The desirability of saving infantile life when that life must be lived under conditions which are incompatible with healthy human life seems very doubtful. It is a waste of effort to save life when the individuals are brought up so as to be incapable of exercising the useful functions of citizenship. Improvement of housing and the provision of open spaces should be the main line of action. It is quite true that during the war not much can be done in this direction, but I am quite sure that as soon as the war is over the older sanitation will again come into its own."

Speaking of Professor Karl Pearson's contention that the beneficent action of "natural selection" is arrested by modern methods of infant mortality prevention, Dr. C. W. Saleeby, in his address on "The Nurture of the Race,"⁴ first emphatically denies Pearson's conclusion that infant mortality has not declined with the improvement in environment of "the last thirty to forty years," and then goes on to say:

"The truth is that such terms as 'Darwinism' and 'natural selection' have no place in this connection until *the factor of nurture* is allowed for, and that is the all-important factor which those neglect who report upon these medical matters without personal knowledge. The elementary fact that the infant has been alive for nine months before its birth is forgotten; and its condition at birth and the consequences thereof are tacitly assumed to depend upon heredity alone, though it may have been dosed with lead or alcohol, or infected with the parasites of syphilis or rheumatic fever in any degree. Only entire ignorance of Darwin's writings and of biological theory could excuse the writers who assume that the consequences of such malnutrition may be included as the working of natural selection.

"Two other fundamental differences between the contemporary destruction of infancy and natural selection may be noted. The first is that natural selection *slays or spares*, while the processes which destroy infancy among us *slay and spoil*. The damage done to the survivors is forgotten by armchair biologists, but our land is full of it. Obviously, if natural selection similarly spoilt many of those whom it did not kill, it could not be the useful factor of evolution which the nineteenth century used to suppose. Secondly, natural selection is a process of adaptation to, and selection by, a natural environment. To use the term as applicable to the processes initiated by such hideously unnatural things as the slum, the public house, and the white-lead factory is an abuse of language and a caricature of science.

⁴Delivered at the National Conference on Infant Mortality, Liverpool, England. July 3. 1914.

"Of course the least resistant infants are the most easily killed; so much self-evident truth there is in the theory. Hence, for instance, male infants—therefore 'unfit,' according to this egregious biology—are killed in larger numbers than female, and so a good start is made towards that excess of adult women in the community which is the cause of many evils, and which the fight for the welfare of motherhood and infancy is helping to remedy.

"Serious biology knows that nurture begins its influence at conception, and that ante-natal nurture must be reckoned with. The so-called results of heredity can never be passed as such until this reckoning has been made."

And further, Dr. Saleeby states as follows:

"In fact the whole trend of recent inquiry is to throw the emphasis upon that part of eugenics which I call Preventive Eugenics, and which depends upon the recognition of what I call the 'racial poisons.' That syphilis was the worst of these we knew; but that it was as important as it is no one knew until the subtle tests of today were applicable. Accurate language is necessary henceforward. To take another instance, we speak of persons being 'born blind,' and describe their condition as congenital. Such persons constitute from one-third to one-half of the population of our institutions for the blind; but they were not born blind at all. They were born seeing, and were blinded by the racial poison produced by the gonococcus, against which we had failed to protect their eyes. Many have written publicly on behalf of Mr. Pearson's campaign for the blind, but none of these pleas except my own pointed to the fact that by far the greatest single cause of blindness could be abolished if we would properly care for infancy.

"Every further investigation of this subject urges us to the care of earlier periods in the individual history. From toothless would-be recruits we are forced back to school children, thence to those 1 to 5 years old, whom I would fain call 'home children,' and from the home child to the infant. Life being continuous, the deepest of all biological principles, in this relation, is clearly that we must begin at the beginning. The reduction in infant mortality applies mainly to the second half of the year of infancy—largely because the first half is being to some extent guarded. But if the mortality in that first half is to be reduced, we must get back to the real beginning, which is ante-natal nurture or, from its external aspect, the care of expectant motherhood. To this end we require what students have so long been demanding, first, that the Notification of Births Act, that admirable measure which we owe above all to Mr. Benjamin Broadbent, of Huddersfield, should be made compulsory; and, second, the registration of stillbirths. These are simple and feasible propositions—as feasible as the demand, here reiterated, that the Home Office should interfere with the present abominable destruction of ante-natal life and of maternal health by the use of lead under the name of diachylon. Also we need the extension of the principle long urged by Dr. Ballantyne, and first realized in the Royal Edinburgh Maternity Hospital in 1901, that pre-maternity wards should be established, where expectant motherhood can be studied and protected."

Professor Pearson and Dr. Snow have attempted to prove their contention that "natural selection" operates by weeding out the weaker or less fit by subjecting certain infant and child mortality data to mathematical treatment. They have applied to these data mathematical methods to determine the correlation that may exist between high and low infant mortality in given years or periods and the mortality among the child survivors; particularly in the second, third, fourth and fifth years of life. Pearson and Snow both profess to have found an inverse or negative correlation between these mortalities, or in other words, that a higher than average or normal infant mortality generally connotes a lower than average or normal mortality among the survivors, ages one to four years and vice versa.

Practically all of the data thus far used by Pearson, Snow and Newsholme seem to be defective in this important respect that they give only the year of death and age at death. In other words, no exact comparison has been possible of the infant deaths with the deaths of survivors, ages 1-4 years, because of a certain overlapping of one cohort of births with another in successive calendar years. Suppose, for illustration, that 1,500 infant deaths were observed in 1910. Most of these may have been born in 1910, but a fair proportion would have been born in 1909.

To obtain absolutely true results the data used must be such that the mortality of each annual cohort of infants can be followed according to attained age. In other words, the data should be of such a character as to make possible the construction of a life table for the first five years of life, and for each separate cohort of births in the various calendar years of the period over which the observation extends. Denoting the births, say in 1910, by ${}^{1910}l_0$, we would obtain the following table:

${}^{1910}l_0$	d_0	q_0		${}^{1910}l_3$	d_3	q_3
${}^{1910}l_1$	d_1	q_1		${}^{1910}l_4$	d_4	q_4
${}^{1910}l_2$	d_2	q_2		${}^{1910}l_5$	d_5	q_5

The symbol ${}^{1910}l_0$ stands for the number of births in 1910, the symbol ${}^{1910}d_0$ stands for the number survivors among those births who attained to the age of one year, while ${}^{1910}l_2$, ${}^{1910}l_3$, ${}^{1910}l_4$ and ${}^{1910}l_5$ represent the corresponding survivors at ages 2, 3, 4 and 5 years. The symbol d_0 represents the number of deaths of

infants or at ages below one year, or $d_0=l_0-l_1$. Similarly d_1 represents the number of deaths of children between ages 1 and 2 or in the second year of life, that is, $d_1=l_1-l_2$. The symbols q_0, q_1, q_2, q_3, q_4 and q_5 represent the death rates in the first five years of life, or $q_0=\frac{d_0}{l_0}; q_1=\frac{d_1}{l_1}; q_2=\frac{d_2}{l_2}, \text{ etc.}$

Very few countries keep their birth and mortality records in such manner as to permit of these exact calculations but Holland has done so and for quite a long period of years. The Dutch statistics as published in the official "Bijdragen tot de Statistiek van Nederland," give the deaths by attained ages and by calendar years of birth. That is to say the deaths for each cohort of birth in a given calendar year are given as two separate numbers. For illustration, the infant mortality of those born in 1910 is given (1) as those dying in 1910 and (2) as those dying in 1911. This method is followed for all ages of life and a given cohort of births can thus be followed with unusual accuracy through its successive age periods. The Dutch statistics also carefully distinguish the two sexes so the differences in mortality can be determined with exceptional accuracy as regards the factors of sex and age.

The following example illustrates the run of mortality among the survivors at various ages of the male births during the calendar year 1905:

Survivors and Deaths Among the Cohort of 1905
Dutch Male Births (Whole Country)

x	l_x	d_x
Age	Living	Deaths
0-1	87,516	12,167
1-2	75,349	2,462
2-3	72,887	880
3-4	72,007	539
4-5	71,468	355
5-6	71,113	

According to this illustration, out of the 87,516 male births (excluding still births) of 1905, 12,167 died before attaining to the age one year or completing the first year of life; 2,462 died in the second year of life; 880 in the third year of life, etc. From these

Dutch data we have thus been able to construct curtate life tables, 0-5 years of age for each calendar year cohort of living births for the fifteen year period, 1901-1915.

As previously stated the Dutch data distinguish the two sexes but they are also presented according to a population-size classification of communes. In Table I are presented a series of life tables of Dutch males, ages 0-5 years for

- (1) Communes with more than 100,000 population
- (2) " " 20,000 to 100,000 population
- (3) " " 5,000 to 20,000 "
- (4) " " less than 5,000 "
- (5) All Communes, or the whole country.

TABLE I.—SURVIVORS AND DEATHS OF DUTCH MALE BIRTHS

Years	Age in Yrs.	Communes with Population of								Whole Country	
		Over 100,000		20,000 to 100,000		5,000 to 20,000		Less than 5,000			
		l_x	d_x	l_x	d_x	l_x	d_x	l_x	d_x	l_x	d_x
1901	0	19,307	3,125	12,083	1,974	25,706	3,864	29,237	4,833	86,333	13,796
	1	16,182	715	10,109	386	21,842	807	25,404	810	72,537	2,718
	2	15,467	236	9,723	124	21,035	307	24,594	295	69,819	962
	3	15,231	143	9,599	88	20,728	207	24,299	197	68,857	635
	4	15,088	94	9,511	64	20,521	127	24,102	127	68,222	412
	5	14,994	..	9,447	..	20,394	..	23,975	..	67,810	..
1902	0	19,126	2,642	12,043	1,721	26,468	3,621	29,346	4,160	86,983	12,144
	1	16,484	726	10,322	440	22,847	866	25,186	820	74,839	2,842
	2	15,758	247	9,882	144	21,991	335	24,366	337	71,997	1,063
	3	15,511	185	9,788	87	21,656	179	24,029	174	70,934	575
	4	15,376	94	9,651	62	21,477	113	23,855	112	70,359	381
	5	15,282	..	9,589	..	21,304	..	23,743	..	69,978	..
1903	0	19,102	2,789	12,169	1,962	26,588	3,896	29,532	4,528	87,386	13,175
	1	16,313	677	10,207	430	22,687	893	25,004	867	74,211	2,867
	2	15,636	207	9,777	118	21,794	249	24,137	273	71,344	847
	3	15,429	134	9,659	82	21,545	149	23,864	167	70,497	532
	4	15,295	92	9,577	58	21,396	111	23,697	122	69,965	383
	5	15,203	..	9,519	..	21,285	..	23,575	..	69,582	..
1904	0	19,302	2,585	12,155	1,889	26,626	3,887	29,836	4,402	87,919	12,763
	1	16,717	634	10,266	299	22,739	617	25,434	751	75,156	2,301
	2	16,083	223	9,967	150	22,122	251	24,683	268	72,855	892
	3	15,860	127	9,817	96	21,871	169	24,415	192	71,963	584
	4	15,733	91	9,721	66	21,702	108	24,223	135	71,379	400
	5	15,642	..	9,655	..	21,594	..	24,088	..	70,979	..
1905	0	19,047	2,504	12,005	1,689	26,722	3,673	29,742	4,301	87,516	12,167
	1	16,543	623	10,316	395	23,049	714	25,441	730	75,349	2,462
	2	15,920	198	9,921	128	22,935	268	24,711	286	72,867	880
	3	15,722	104	9,793	80	22,067	165	24,425	190	72,007	539
	4	15,618	77	9,713	52	21,902	113	24,235	113	71,468	355
	5	15,541	..	9,661	..	21,789	..	24,122	..	71,113	..
1906	0	19,230	2,263	11,973	1,758	26,491	3,487	29,455	4,244	87,149	11,752
	1	16,967	630	10,215	355	23,004	775	25,211	823	75,397	2,588
	2	16,337	213	9,860	108	22,229	228	24,383	275	72,899	824
	3	16,124	113	9,752	71	22,001	136	24,198	155	71,985	475
	4	16,011	76	9,681	68	21,865	107	23,983	79	71,510	330
	5	15,935	..	9,613	..	21,758	..	23,874	..	71,180	..

TABLE I.—SURVIVORS AND DEATHS OF DUTCH MALE BIRTHS
(Continued)

Year	Age in Yrs.	Communes with Population of								Whole Country	
		Over 100,000		20,000 to 100,000		5,000 to 20,000		Less than 5,000			
		l_x	d_x	l_x	d_x	l_x	d_x	l_x	d_x	l_x	d_x
1907	0	19,338	2,078	12,031	1,547	26,608	3,427	29,819	4,171	87,791	11,223
	1	17,260	614	10,484	359	23,176	704	25,648	799	76,568	2,476
	2	16,646	195	10,125	137	22,472	240	24,849	229	74,092	801
	3	16,451	110	9,988	80	22,232	158	24,620	127	73,291	475
	4	16,341	74	9,908	59	22,074	85	24,493	103	72,816	321
1908	5	16,267	..	9,849	..	21,989	..	24,390	..	72,495	..
	0	19,263	2,030	12,033	1,603	26,873	3,363	30,148	4,375	88,317	11,371
	1	17,233	549	10,430	363	23,510	648	25,773	658	76,946	2,218
	2	16,684	176	10,067	150	22,862	274	25,115	219	74,728	799
	3	16,508	104	9,937	106	22,588	147	24,896	143	73,929	500
1909	4	16,404	67	9,831	47	22,441	117	24,753	103	73,429	334
	5	16,337	..	9,784	..	22,324	..	24,650	..	73,095	..
	0	18,572	1,724	11,544	1,486	27,097	3,063	30,173	3,408	87,386	9,681
	1	16,848	540	10,058	430	24,034	720	26,765	670	77,705	2,360
	2	16,308	179	9,628	133	23,314	248	26,095	247	75,345	807
1910	3	16,129	78	9,495	59	23,066	167	25,848	150	74,538	454
	4	16,051	68	9,436	47	22,899	103	25,698	113	74,084	331
	5	15,983	..	9,389	..	22,796	..	25,585	..	73,758	..
	0	18,372	1,785	14,141	1,771	27,509	3,552	26,871	3,661	86,893	10,760
	1	16,587	446	12,370	375	23,957	715	23,210	687	76,124	2,223
1911	2	16,141	149	11,995	112	23,242	269	22,523	219	73,901	749
	3	15,992	105	11,883	69	22,973	132	22,904	132	73,152	438
	4	15,887	86	11,814	56	22,841	92	22,172	100	72,714	334
	5	15,801	..	11,758	..	22,749	..	22,072	..	72,380	..
	0	18,258	1,854	13,719	1,793	26,858	3,823	26,469	4,189	85,304	11,659
1912	1	16,404	460	11,926	241	23,035	524	22,280	519	73,645	1,744
	2	15,944	161	11,685	108	22,511	210	21,761	206	71,901	685
	3	15,783	79	11,577	60	22,301	150	21,555	135	71,216	424
	4	15,704	88	11,517	52	22,151	96	21,420	89	70,792	325
	5	15,616	..	11,465	..	22,055	..	21,331	..	70,467	..
1913	0	18,549	1,427	14,105	1,330	27,727	2,740	27,004	2,829	87,385	8,326
	1	17,122	466	12,775	339	24,987	601	24,175	591	79,059	1,997
	2	16,656	170	12,436	118	24,366	254	23,584	225	77,062	767
	3	16,486	114	12,318	79	24,132	160	23,359	153	76,295	506
	4	16,372	102	12,239	63	23,972	102	23,206	119	75,789	386
1914	5	16,270	..	12,176	..	23,870	..	23,087	..	75,403	..
	0	19,203	1,502	14,116	1,358	27,962	3,030	27,476	3,124	88,757	9,014
	1	17,701	416	12,758	293	24,932	672	24,352	658	79,743	2,039
	2	17,285	208	12,465	102	24,260	238	23,694	206	77,704	754
	3	17,077	143	12,363	125	24,022	143	23,488	170	76,950	581
1915	4	16,934	88	12,238	83	23,879	124	23,318	127	76,369	422
	5	16,846	..	12,155	..	23,755	..	23,191	..	75,947	..
	0	19,773	1,517	14,138	1,426	28,804	3,259	28,100	3,270	90,815	9,472
	1	18,256	546	12,712	281	25,545	649	24,830	666	81,343	2,132
	2	17,710	259	12,431	165	24,896	254	24,164	232	79,211	910
1916	3	17,451	172	12,266	107	24,642	197	23,932	156	78,301	632
	4	17,279	176	12,159	154	24,445	290	23,776	245	77,669	865
	5	17,103	..	12,005	..	24,155	..	23,531	..	76,804	..
	0	19,841	1,322	14,781	1,263	29,369	2,609	29,408	2,903	93,899	8,097
	1	18,519	551	13,518	385	26,760	695	26,505	670	85,302	2,301
1917	2	17,968	264	13,133	167	26,065	264	25,835	257	83,001	952
	3	17,704	165	12,966	112	25,801	232	25,678	193	82,049	702
	4	17,539	130	12,854	120	25,569	225	25,385	200	81,347	675
	5	17,409	..	12,734	..	25,344	..	25,185	..	80,672	..

TABLE II.—DUTCH MALES
Death Rates per 100,000 Births or 100,000 qx, with Secular Disturbances.

Com- munes with	Yrs. of Life	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
More than 100,000 Population	First	16,186	13,313	14,608	13,392	13,146	11,768	10,746	10,538	9,283	9,716	10,154	7,693	7,822	7,672	6,663
	Second	4,418	4,404	4,153	3,793	3,766	3,713	3,557	3,186	3,205	2,689	2,804	2,722	2,850	2,991	2,975
	Third	1,526	1,567	1,325	1,387	1,244	1,304	1,171	1,085	1,088	928	1,010	1,021	1,203	1,462	1,469
	Fourth	989	870	869	801	661	701	689	630	454	657	501	691	837	866	982
	Fifth	623	611	602	578	493	476	463	408	454	541	560	623	520	1,019	741
	(4)q,	7,341	7,292	6,866	6,481	6,057	6,082	5,753	5,199	5,134	4,739	4,804	4,976	4,830	6,316	5,994
20,000 to 100,000 Population	First	16,337	14,290	10,123	15,541	14,069	14,983	12,858	13,322	12,872	12,524	13,069	9,429	9,620	10,086	8,545
	Second	3,818	4,263	4,213	2,913	3,829	3,475	3,424	3,480	4,275	3,032	2,021	2,654	2,297	2,211	2,848
	Third	1,275	1,457	1,207	1,505	1,290	1,095	1,353	1,291	1,351	934	924	949	818	1,327	1,272
	Fourth	917	863	849	978	817	728	801	1,067	621	581	518	641	1,011	872	864
	Fifth	678	642	606	679	535	702	595	478	408	474	452	515	678	1,267	934
	(4)q,	6,549	7,101	6,740	5,362	6,349	5,893	6,057	6,104	6,351	4,947	3,866	4,689	4,726	5,562	5,800
5,000 to 20,000 Population	First	15,032	13,631	14,656	14,599	13,745	13,163	12,882	12,514	11,304	12,012	14,234	9,882	10,336	11,314	8,884
	Second	3,695	3,747	3,938	2,713	3,098	3,369	3,038	2,766	2,996	2,985	2,275	2,405	2,686	2,541	2,597
	Third	1,459	1,523	1,143	1,136	1,200	1,026	1,068	1,198	1,064	1,157	983	1,042	981	1,020	1,013
	Fourth	999	827	692	773	748	618	711	651	724	675	673	663	595	799	899
	Fifth	619	526	519	498	516	489	385	521	450	403	433	425	519	1,186	880
	(4)q,	6,129	6,491	6,180	5,035	5,467	5,416	5,122	5,045	5,151	5,042	4,254	4,470	4,721	5,441	5,291
Less than 5,000 Population	First	19,530	14,176	15,333	14,754	14,461	14,408	13,988	14,512	11,205	13,624	15,820	10,476	11,370	11,370	9,871
	Second	3,188	3,256	3,467	2,953	2,869	3,284	3,115	2,563	2,503	2,445	2,329	2,445	2,702	2,382	2,628
	Third	1,199	1,383	1,131	1,086	1,157	1,128	922	872	947	972	947	954	869	960	995
	Fourth	811	724	700	786	778	643	516	574	580	592	626	655	724	652	765
	Fifth	527	470	515	557	466	330	421	416	440	451	415	513	545	1,030	788
	(4)q,	5,625	5,729	5,715	5,292	5,185	5,303	4,905	4,357	4,409	4,903	4,259	4,501	4,708	5,232	4,980
Whole Country	First	15,960	13,961	15,076	14,517	13,903	13,485	12,784	12,875	11,078	12,393	13,668	9,528	10,156	10,430	8,669
	Second	3,747	3,797	3,863	3,062	3,267	3,432	3,234	2,833	3,037	2,920	2,368	2,526	2,557	2,621	2,697
	Third	1,378	1,476	1,187	1,224	1,207	1,132	1,088	1,069	1,071	1,014	953	995	970	1,149	1,147
	Fourth	922	811	755	822	749	660	648	676	909	599	595	668	765	807	856
	Fifth	604	542	547	560	497	461	441	465	447	459	459	509	539	1,114	830
	(4)q,	6,517	6,495	6,238	5,558	5,622	5,593	5,319	5,005	5,056	4,918	4,315	4,624	4,790	5,580	5,428

From Table I it is possible to compute the death rates per 100,000 living at the various age periods, or 100,000 q_x for the ages under 1 year, 1 year, 2 years, 3 years and 4 years and the probability that a life aged 1 year will die in the interval, 1-4 years. This latter is expressed as ${}_{(4)}q_1$ which equals $1 - {}_{(4)}p_1$ or $1 - \frac{l_5}{l_1}$.

The results of these computations are presented in Table II by groups or classes of communes and for all Holland. The same results in graphic form are shown in the first half of the accompanying chart.

Even a cursory examination of this first part of the chart discloses important secular changes in the death rates; for illustration, a marked decline in the infant death rate during the period 1901-1915 and a similar, though less marked, decline is shown for the ages 1-4 years. These periodic changes are secular and dependent probably upon more or less common factors, such as improved milk supply, better water supply, better hygienic practices, conditions, etc. Before testing these series of death rates for possible correlations which may exist between them it is necessary to free them from the secular disturbances, otherwise any correlations found would be likely to be wholly or almost entirely of a spurious character. If the respective values of q_0 and ${}_{(4)}q_1$ were correlated as given in Table I or as presented in the first part of the chart, we would find a marked positive correlation, wholly spurious, and we might reach the false conclusion that the declining infant mortality has been the cause of the declining mortality at ages 1-4. The correlation found by this method would be spurious due to the simultaneous secular decrease of the two series q_0 and ${}_{(4)}q_1$. It is therefore necessary first of all to eliminate the secular disturbance by use of a mathematical formula.⁵

⁵ This formula, with illustrative examples of its use, is given in "The Mathematical Theory of Probabilities," pp. 161 *et seq.*, by Mr. Arne Fisher. The Macmillan Co., N. Y., 1917.

Comparative Male Infant and Child Death Rates Holland, 1901—1915

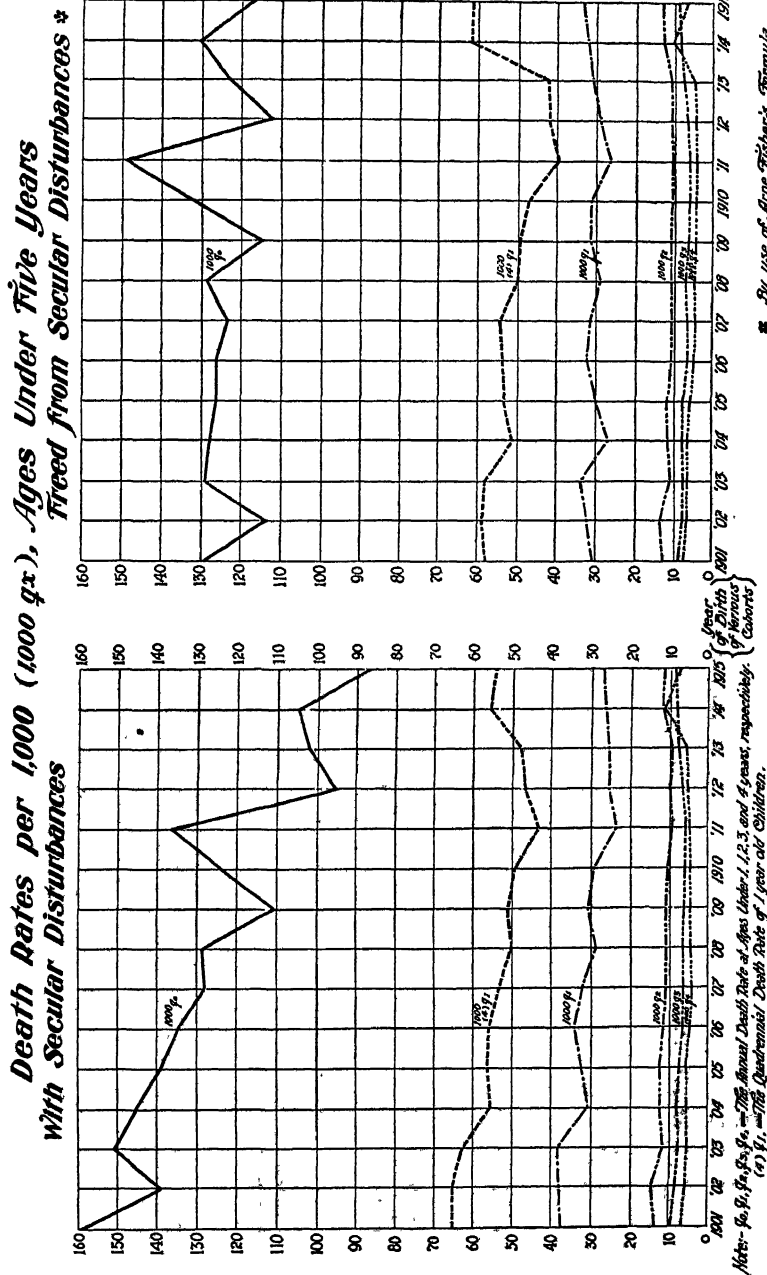


TABLE III.—DUTCH MALES
Death Rates per 100,000 Births or 100,000 qx, Freed from Secular Disturbances.
(Arne Fisher's Formula)

Com- munes with	Yrs. of Life	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
More than 100,000 Population	First	12,815	10,495	11,843	11,180	11,487	10,662	10,193	10,538	9,836	10,822	11,813	9,905	10,587	10,990	10,534
	Second	8,489	8,908	8,489	8,262	8,368	8,448	8,424	8,186	8,398	8,954	8,202	8,283	8,014	8,787	8,904
	Third	1,410	1,467	1,242	1,321	1,193	1,271	1,154	1,055	1,115	956	1,060	1,087	1,286	1,562	1,585
	Fourth	921	866	866	791	663	693	663	680	487	662	609	801	860	1,001	950
	Fifth	707	683	626	626	529	499	465	408	412	517	524	575	480	947	667
	(4) q.	6,382	6,470	6,181	6,883	6,646	6,808	6,890	6,199	4,987	4,455	4,393	4,428	4,145	7,138	6,953
20,000 to 100,000 Population	First	12,756	11,204	13,551	13,483	12,526	13,654	12,844	13,322	13,386	13,553	14,612	11,487	12,192	13,172	12,146
	Second	2,959	3,509	3,585	2,411	3,452	3,224	3,208	3,460	4,401	3,283	2,898	3,156	2,925	2,965	3,727
	Third	1,116	1,321	1,093	1,414	1,222	1,050	1,380	1,291	1,404	979	992	1,040	932	1,463	1,431
	Fourth	857	841	806	944	791	711	792	1,087	630	598	544	675	1,054	924	824
	Fifth	5,595	788	686	743	563	734	611	478	482	437	404	451	598	1,171	822
	(4) q.	6,283	6,283	6,058	5,407	5,940	5,620	5,921	6,194	4,787	4,674	3,457	4,144	4,044	4,744	4,846
5,000 to 20,000 Population	First	12,637	11,028	12,945	13,230	12,718	12,479	12,540	12,514	11,646	13,596	15,261	11,251	12,547	13,367	11,279
	Second	3,054	3,197	3,478	2,347	2,823	3,186	2,940	2,766	3,088	3,168	2,560	2,771	3,168	3,091	3,238
	Third	1,262	1,354	1,002	1,023	1,116	970	1,040	1,198	1,092	1,213	1,017	1,154	1,122	1,189	1,210
	Fourth	947	782	655	743	726	603	704	661	731	590	695	693	682	844	951
	Fifth	747	636	611	571	571	526	403	521	432	363	378	352	427	1,076	752
	(4) q.	5,467	5,932	5,714	5,407	5,188	5,230	5,215	5,045	5,058	4,856	3,975	4,098	4,255	6,000	5,943
Less than 5,000 Population	First	14,056	12,056	13,568	13,840	13,401	13,701	13,635	14,512	11,648	14,331	16,886	11,890	13,137	13,757	12,845
	Second	2,768	2,898	3,167	2,713	2,689	3,164	3,065	2,563	2,663	3,080	2,609	2,686	3,002	3,042	2,948
	Third	1,031	1,239	1,011	990	1,085	1,080	898	872	971	1,020	1,019	1,050	989	1,104	1,163
	Fourth	768	687	689	761	700	631	510	574	586	604	644	680	755	680	798
	Fifth	659	583	609	632	522	368	440	416	421	414	359	438	451	917	656
	(4) q.	5,138	5,312	5,367	5,014	4,976	5,164	4,975	4,367	4,359	4,764	4,050	4,223	4,420	5,649	4,493
Whole Country	First	12,942	11,357	12,908	12,791	12,601	12,617	12,350	12,875	11,512	13,261	14,970	11,264	12,326	13,034	11,707
	Second	3,072	3,219	3,381	2,676	2,978	3,239	3,136	2,853	3,133	3,113	2,667	2,913	3,039	3,199	3,372
	Third	1,213	1,334	1,069	1,130	1,136	1,085	1,064	1,099	1,095	1,061	1,024	1,089	1,088	1,291	1,312
	Fourth	879	774	724	788	731	642	642	676	615	611	613	687	786	844	899
	Fifth	720	642	630	626	547	494	468	455	430	426	409	443	456	1,014	714
	(4) q.	5,778	5,857	5,706	5,133	5,303	5,380	5,425	5,005	4,980	4,705	3,996	4,199	4,228	6,218	6,172

In Table III and in the second half of the accompanying chart the data and graph are presented as thus freed of the secular disturbances, the true relations of the two series to each other being left undisturbed. As shown clearly in the graph or chart, the application of this correction has the effect of leveling the rates without otherwise disturbing the variations or statistical oscillations in the series or the correlations of each with the others.

Having eliminated the secular disturbances or changes from the series we can proceed to the calculation of the true correlations. The first step is to find the correlations between q_0 and q_1 , or the mortality in the first and second years of life. And, secondly, to find the correlation between q_0 and $(4)q_1$, or the mortality of the first year of life and the mortality of the survivors in the age period, 1-4 years. It has seemed best to confine the study to these two comparisons rather than to compare the infant mortality with the mortality of the survivors in the third, fourth and fifth years of life, separately. The required coefficients of correlation are found by use of the usual elementary method, or by means of the Braivais-Pearson formula. The final results of the calculations are as follows:

Coefficient of Correlation Dutch Males (1901-1915)

Group	$q_0 \text{ and } q_1$		$q_0 \text{ and } (4)q_1$	
	r		r	
Communes with more than 100,000 population....	+0.5675	$\pm .1747$	+0.2250	$\pm .2448$
“ “ 20,000 to 100,000 “	-0.2549	$\pm .2412$	-0.1029	$\pm .2552$
“ “ 5,000 to 20,000 “	-0.3593	$\pm .2248$	-0.2875	$\pm .2366$
“ “ less than 5,000 “	-0.1328	$\pm .2534$	-0.1148	$\pm .2546$
All Holland	-0.4445	$\pm .2069$	-0.2593	$\pm .2407$

These results, with the exception of those for the larger communes (more than 100,000 population) * seem to confirm the Pearson and Snow theory and investigations, namely, that the mortality at ages 1-4 varies inversely with infant mortality. In the large communes, however, the result is quite strikingly reversed and evidently there must be some underlying cause or causes for these differences. We can only at present suggest that in the very large cities or communes of Holland medical and clinical and child welfare agencies in general may be much better developed than in the

* Amsterdam, s'Gravenhage (The Hague), Rotterdam and Utrecht.

smaller communes, villages and rural districts. If this is true, as a natural corollary we would expect the survivors in the years immediately subsequent to infancy, ages 1-4, to have their lives prolonged in larger proportionate numbers than would be likely in the smaller communes and rural sections. This supposition is only advanced as a possible reason for the anomaly and the point requires to be investigated further before definite conclusions are reached. If the above supposition is correct then it necessarily follows that the action of natural selection is more hindered in the large cities of Holland than elsewhere in that country and this quite conceivably would result in the positive correlations noted above.

We have gone a step further in our investigation of the data for the large communes and have calculated the coefficient of correlation between ${}_{(2)}q_0$ and ${}_{(3)}q_2$ or between the mortality in the first two years of life and the mortality among the survivors in the next three years of life, 2-4. The correlation, however, remains positive as was expected, the coefficient being +0.4015.

It has been suggested that quite unnatural conditions exist in the large cities of Holland as a result of the strong current of migration from the rural districts and smaller communes to the four metropolitan centers. Just how this factor affects the relation between infant and child mortality in the large cities we are unable to say, but this economic condition should be kept in mind. Evidently the statistics of infant deaths and child deaths would be artificially disturbed by this migratory trend and possibly to such a degree and in such a manner as to make positive the coefficient of correlation between the infant and child (1-4 years) death rates, which otherwise might have been negative. Of course the coefficients of correlation for Holland, as a whole, would be unaffected by this intra-country migration.

In this connection it is interesting to note that in "An Examination of Some Factors Influencing the Rate of Infant Mortality," M. Greenwood, Jr., and J. W. Brown found that the urban data for Bavaria collected by Dr. Alfred Groth and Prof. Martin Hahn gave probable errors so large in the coefficients of correlations be-

tween the variables that they (Greenwood and Brown) confined their analysis to the data from the rural districts.⁷

Another and perhaps the most suggestive of all the reasons advanced for the negative correlations in the rural as contrasted with the positive correlations in the large urban districts of Holland, is that stated by Dr. Brownlee in his criticism of Dr. Snow's paper on "The Intensity of Natural Selection in Man." The possible influence of the epidemiological variations in infant and child mortalities in the rural and urban districts is expressed by Dr. Brownlee as follows:

"The chief part of Dr. Snow's paper is taken up with the discussion of the effect which mortality under 3 years of age has upon the mortality during the fourth and fifth year of age. For this purpose he divides the country up into urban and rural districts. He finds in the rural divisions that a very marked negative correlation between the earlier and later period exists. He explains the absence of correlation in urban districts by the emigration and immigration which is constantly taking place. The data he chiefly examines are those referring to children born in 1870. These he follows through, the first five years of life. He, however, does not consider at all the epidemiological aspect of the matter, and thus fails to clear his evidence of an important source of fallacy. The results he obtains are the results such as might be easily anticipated. In the country districts epidemics of measles and whooping cough occur at much longer intervals than in towns. In general, for a country district to be infected a new source of disease must be imported, while in towns measles and whooping cough are always present and occur roughly at intervals of two years. In correlating the mortality under 3 years with that during the fourth and fifth years of age Dr. Snow thus arranges the data in a form which greatly increases the difficulties of disentangling the effects produced by the presence of epidemic children's diseases. As these are among the most important causes of child mortality it is evident that a large part of the correlation observed must be due to these diseases. If the epidemics occur in the country at intervals of 3 years or longer, it is quite obvious that a high mortality under 3 years of age will be associated with a low mortality in the fourth and fifth years, and vice versa. The negative correlation obtained from the statistics of the country divisions is, therefore, what might be expected, and the absence of correlation found in the statistics of the towns might also be explained on the same hypothesis of more frequent epidemics."

It is not our purpose to draw a final conclusion as to the possible selective influence of a high infant mortality rate. Taken by themselves the coefficients of correlation as here deduced from the Holland data for males would seem to offer some support to the

⁷ See page 12 Reprint in *The Journal of Hygiene* Vol. XII. No. 1. May 3, 1912.

Pearson theory. On the other hand, however, it must be admitted that the factors entering into the problem are so numerous and complex, as emphasized by Dr. Brownlee and other investigators, that a positive conclusion is unwarranted until the subject has been investigated much further.

We have thought it well worth while to direct attention to data not previously (to our knowledge) utilized in the discussion of infant mortality and its effect on the after-lifetime of the survivors, and despite the statistical mathematical findings we would hesitate to conclude that there is not much of truth in Dr. Farr's statement that as a result of a high infant mortality "many of the strongest children are wounded and are left weakly for life."* Other supporters of this view have been quoted in the earlier part of this paper, but we may add the following statement made in "A Report of the International Congress on Prevention of Infant Mortality," prepared under the direction of Prof. Dietrich, of Berlin:

"It was formerly believed that the rate of mortality among children who had not reached the first anniversary of their birth was a wise dispensation of nature intended to prevent children with a weak constitution from becoming too plentiful. Today we know that a great infant mortality is a national disaster on the one hand because numerous economic values are created without purpose and prematurely destroyed. And on the other because the causes of the high rate of infant mortality affect the powers of resistance of the other infants and weaken the strength of the nation in its next generation.

Also Dr. J. W. Schereschewsky of the United States Public Health Service has expressed a similar view in an address quoted in Monograph No. 1 (pages 4 and 5) of the Children's Bureau, as follows:

"A necessary sequence to a high infant mortality rate is the larger number of children who, having weathered the storms of the first year, reach the haven of comparative safety of the other years of life in a battered, weakened and crippled condition such as forever handicaps them in becoming efficient social units. It is therefore in the nature of an axiom that, in the degree to which the infant mortality rate is lowered, to a far greater degree will we diminish the great army of defective and degenerate children among us."

The available data being more or less conflicting and the deductions therefrom having thus far led to diametrically opposite conclusions, it would certainly not seem wise for our public health and

* Twenty-Fifth Annual Report of the Registrar-General, pp. XII and XIII, 1864

child welfare agencies to slow up, even a jot, in their work of utilizing every known means for the further prevention of infant deaths. In the meantime, however, those best equipped for the work should continue the careful collection and analysis of infant and child mortality data in the hope that the statistical method, aided by mathematical niceties, may ultimately shed a brighter light on some of the difficult problems at present unsolved.

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INFANT MORTALITY AND PREVENTIVE WORK IN NEW ZEALAND*

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The infant mortality rate for the whole of New Zealand exclusive of the native or Maori population was 48.4 per 1,000 births in 1918. Birth and death registration statistics for the Maori population are still in an unsatisfactory state, and consequently all figures for New Zealand relate only to the white population. This rate of 48.4 is the lowest infant mortality rate for any country in the world. For the United States the rate in 1918 was over twice as high, 101. New Zealand, therefore, possesses great interest for students of infant mortality. What are the causes of this exceptionally low infant mortality rate in New Zealand? Is it due primarily to health measures and infant welfare work, or should it be mainly ascribed to especially favorable local conditions? This paper aims to analyze the statistics of infant mortality, and to give a brief summary of preventive work, and of local conditions.

COMPARATIVE INFANT MORTALITY RATES IN NEW ZEALAND AND THE UNITED STATES

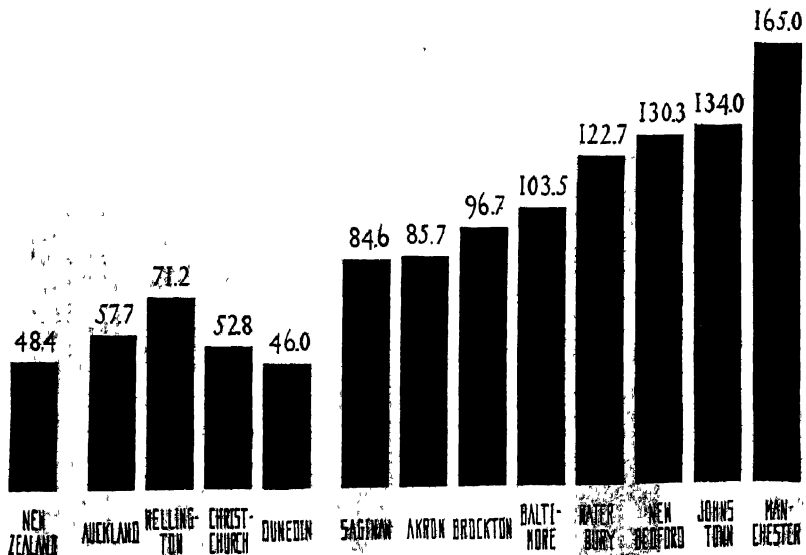
In Table I a comparison is presented of the infant mortality rates in New Zealand as a whole, and in the four principal cities in New Zealand as compared with eight American cities studied by the Children's Bureau. It will be noted that the mortality rates of the four principal cities of New Zealand are only slightly above the rate in the country as a whole, and that all the rates are below, and in many cases very far below, the rates in the American cities selected for special study.

* Grateful acknowledgment is made of the courtesy of New Zealand government officials in furnishing material used in preparing this paper.

TABLE I—Comparative infant mortality rates, New Zealand and American cities studied by the Children's Bureau

Locality	Infant mortality rates. ¹
New Zealand	48.4
Auckland	57.7
Wellington	71.2
Christchurch	52.8
Dunedin	46.0
8 American Cities	111.2
Johnstown, Pa.	134.0
Manchester, N. H.	165.0
New Bedford, Mass.	130.3
Brockton, Mass.	96.7
Saginaw, Mich.	84.6
Waterbury, Conn.	122.7
Akron, Ohio	85.7
Baltimore, Md.	103.5

¹ The rates for New Zealand are for 1918; for the American cities studied by the Bureau the rates are for births in a single year about 1913, except Johnstown, 1911, and Baltimore, 1915.

**CHART I—INFANT MORTALITY RATES
NEW ZEALAND AND AMERICAN CITIES STUDIED
BY THE CHILDREN'S BUREAU.**

The mortality rates are analyzed by cause of death in Table II. The comparison shows that New Zealand has the greatest advantage over the American cities in the mortality from gastric and intestinal diseases. The advantage is nearly as great in the case of respiratory diseases. In the rate from causes peculiar to early infancy, New Zealand's advantage was relatively slight.

TABLE II Comparative infant mortality rates by cause of death, New Zealand and eight American cities studied by the Children's Bureau.

Cause of death	Infant mortality rates									
	New Zealand 1918	Eight American cities ²	Brockton	Saginaw	Johnstown	Manchester	New Bedford	Waterbury	Akron	Baltimore
All causes	48.4	111.2	96.7	84.6	134.0	165.0	130.3	122.7	85.7	103.5
Gastric and intestinal diseases	2.7	32.4	12.4	8.2	32.8	63.3	48.3	41.0	20.4	29.1
Respiratory diseases.....	3.9	19.6	13.2	10.2	26.7	26.2	27.8	18.2	10.2	19.7
Malformations	3.2	4.3	5.0	4.1	3.4	9.0	4.6	4.7	4.0	3.6
Early infancy	27.8	36.1	37.2	37.7	39.6	39.6	29.0	33.7	28.9	37.7
"Epidemic diseases" ¹	4.7	7.1	8.3	5.1	11.6	3.2	3.9	8.4	5.8	6.7
Ill-defined .....	..	2.5	5.0	4.1	7.5	7.0	2.7	1.9	4.4	0.6
All other	6.6	9.3	15.7	15.3	12.3	16.6	8.9	9.8	12.0	6.0

¹ Includes tuberculosis and syphilis.

² Studied by the Children's Bureau; rates are for births in a single year about 1918, except Johnstown, 1911, and Baltimore, 1915.

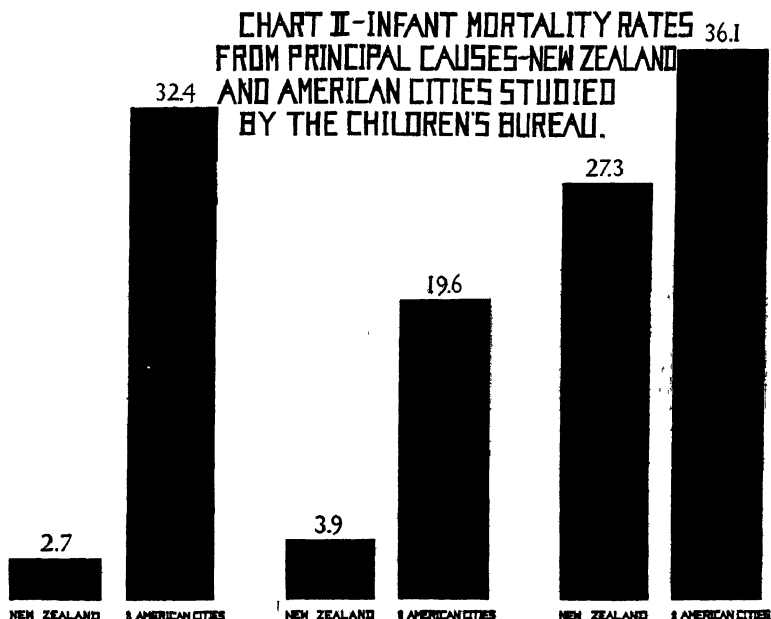


Table III presents a comparison of the infant mortality rates in New Zealand, in the United States Birth Registration Area as a whole, and in Minnesota and Pennsylvania. The differences in the rates from the different causes is again very striking. Infant mortality from gastric and intestinal diseases in the United States Birth Registration Area in 1918 was seven and one-half times the rate in New Zealand; the rate from respiratory diseases was 4 times; from epidemic diseases, 3 times; and from malformations twice the rate in New Zealand. The mortality rate from diseases of early infancy in the United States Registration Area, was one-fifth higher than in New Zealand.

TABLE III Comparative infant mortality rates by cause of death, New Zealand and United States Birth Registration Area, 1918

Cause of death	Infant mortality rates				
	New Zealand 1918	U. S. birth registration area		Minnesota 1918	Pennsylvania 1918
		1917	1918		
All causes	48.4	93.8	100.8	70.9	128.5
Gastric and intestinal diseases....	2.7	21.2	20.4	8.2	32.6
Respiratory diseases	3.9	14.8	16.0	9.3	23.9
Malformations	3.2	6.3	6.5	5.5	8.5
Early Infancy	27.3	31.8	32.8	29.5	34.9
"Epidemic diseases" ¹	4.7	8.6	14.8	11.8	18.3
Ill-defined .....	..	2.9	2.9	1.8	1.1
All other	6.6	8.3	7.7	5.7	9.3

¹ Includes tuberculosis and syphilis.

DECLINE IN INFANT MORTALITY RATES, NEW ZEALAND

In Table IV the decline in infant mortality in New Zealand is shown from 1872-1918. In 1872 the infant mortality rate in New Zealand was substantially the same as the present rate in the United States. It has declined in a period of 45 years to less than one-half its former size.

In the first 5-year period the mortality rate declined 3 per cent, and in the next 5-year period, 10.7 per cent; from this point to about 1899, the fall was relatively slight; since 1900 it has been more rapid; the 5-year period from 1900-1905 shows a decline of 7.7 per cent from the preceding period, while in the last two 5-year

CHART III - INFANT MORTALITY RATES NEW ZEALAND AND U.S. BIRTH REGISTRATION AREA AS A WHOLE AND MINNESOTA AND PENNSYLVANIA 1918

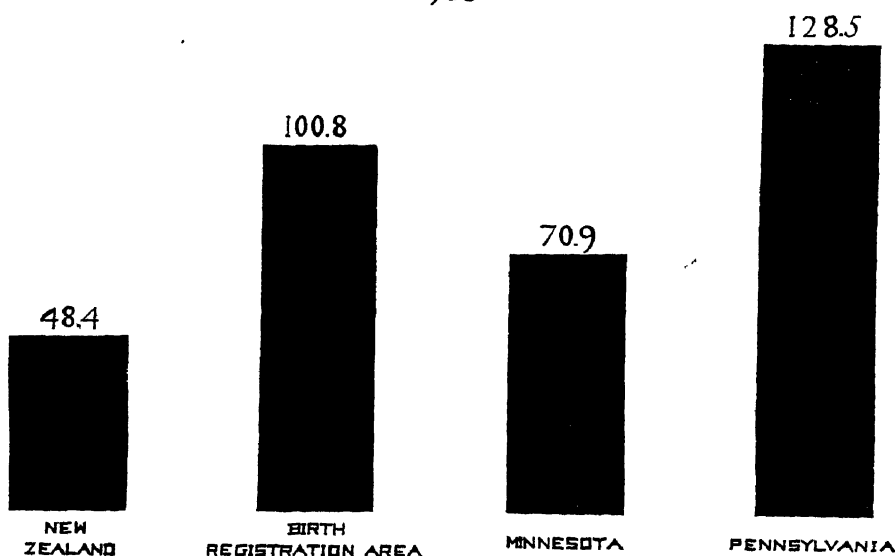
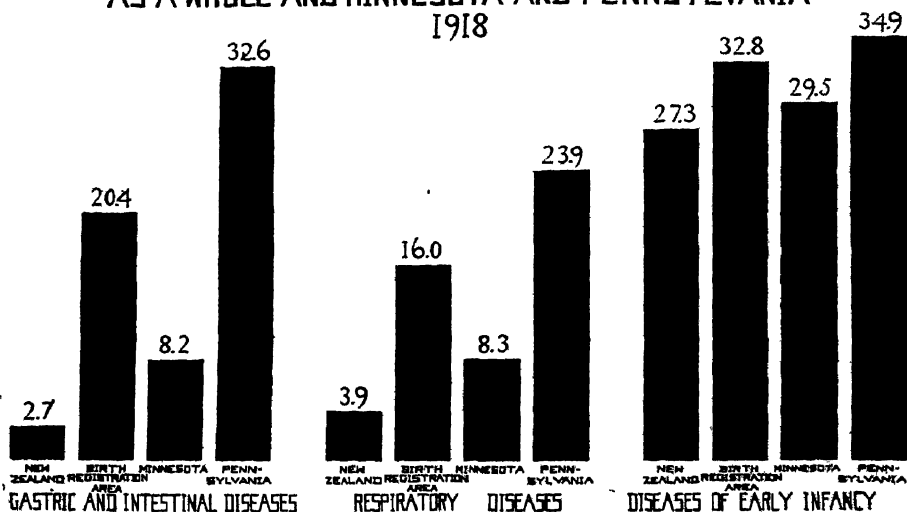


CHART IV INFANT MORTALITY RATES BY CAUSE OF DEATH NEW ZEALAND AND U.S. BIRTH REGISTRATION AREA AS A WHOLE AND MINNESOTA AND PENNSYLVANIA 1918



periods under consideration, the percentage of decrease had nearly doubled. In interpreting this decrease, it should be mentioned that from the point of view of prevention, a fall in the rate of mortality of 10 points is more easily secured when the initial rate is 100, than when the initial rate is only 60. The increase in the rate of fall during the last 10 years is therefore, all the more noteworthy.

**TABLE IV. Decline in infant mortality rates, by periods;
New Zealand, 1872-1918.**

Period	Average annual infant mortality rate	Amount of decrease	Percent decrease
1872-4	105.7	..	..
1875-9	102.3	-3.4	-3.2
1880-4	91.4	-10.9	-10.7
1885-9	86.2	-5.2	-5.7
1890-4	85.7	-0.5	-0.6
1895-9	82.7	-3.0	-3.5
1900-4	76.3	-6.4	-7.7
1905-9	69.6	-6.7	-8.8
1910-14	57.2	-12.4	-17.8
1915-18	49.3	-7.9	-13.8

In Table V the fall in the infant mortality rate from different groups of causes is shown. One of the most important causes of the decline in general death rates for all ages since the 70's of the last century has been the gradual control of epidemic and infectious diseases. The effect is shown, in so far as deaths in early infancy are concerned, in the figures for the group of diseases classed as epidemic, including whooping cough, diphtheria, scarlet fever and measles. This group shows a rapid fall from 18.9 in 1872-74 to 8.7, 7.9, and 6.3 in the three following 5-year periods. In 1890-94 the rate from these diseases went up to 10.2, probably owing to an epidemic of influenza, but since then it has fallen to 5.2 in 1900-1904, and to 2.4 in 1910-14. In 1915-18 it rose slightly to 2.9.

TABLE V Decrease in infant mortality rates, by cause of death, New Zealand, 1872-1918

Period	Deaths under 1 year per 1,000 births										
	Epidemic diseases	Tuberculosis	Veneral diseases	Encephalitis, meningitis and infantile paralyzis	Respiratory diseases	Gastric intestinal diseases	Infantile convulsions	Malformations	Early infancy	External	Other defined
1872-4	14.7	4.7	0.2	1.7	12.5	23.2	10.0	0.6	23.6	1.4	10.5
1875-9	8.8	5.7	0.3	1.6	12.3	22.3	8.2	1.5	24.2	2.0	13.7
1880-4	7.9	5.0	0.3	1.3	12.2	18.0	7.9	1.4	23.1	1.9	12.0
1885-9	6.4	4.2	0.4	1.3	10.8	20.0	6.7	1.2	25.7	1.8	7.4
1890-4	10.2	3.3	0.5	1.3	11.3	17.0	6.4	1.2	25.0	1.8	7.7
1895-9	5.7	3.1	0.6	1.2	10.4	18.5	6.4	1.6	26.1	2.0	7.0
1900-4	5.2	1.8	0.5	1.2	10.0	16.0	4.5	1.6	27.0	2.2	6.1
1905-9	3.9	1.4	0.5	1.3	8.4	15.5	3.6	1.4	26.6	2.0	4.8
1910-14	2.4	0.9	0.4	1.4	5.8	10.0	2.5	3.0	27.0	0.7	2.8
1915-18	2.9	0.4	0.4	1.2	4.6	5.6	2.2	4.0	25.2	0.6	2.3

For Table V the group of gastric and intestinal diseases includes International List numbers 102-110; for other tables, 102-104.

Tuberculosis also showed a marked decline as a cause of infant mortality as early as the 70's and 80's. From 5.7 per 1,000 births in 1875-79, the rate fell in 10 years to 4.2, in the next 10 years to 3.1, in the period from 1905-1909 it reached 1.4, while in the last 4-year period it was 0.4. During this 40-year period, the mortality from tuberculosis was reduced from nearly 6 per 1,000 to four-tenths of one per thousand births.

The infant mortality rate from convulsions shows a decrease from 10.0 per 1,000 in 1872-74 to 2.2 in 1915-1918. This is due doubtless in part to a gradual improvement in the assignment of deaths to the real causes, and in part to an actual decrease in these causes themselves.

Coming now to the more important groups of causes of death among infants, we shall take up in order the gastric and intestinal diseases, the respiratory diseases, and the diseases of early infancy. The group of gastric and intestinal diseases is by far the most deadly to infant life, with the single exception of the diseases of early infancy. The decline in mortality from diarrhea and enteritis is therefore worthy of especial attention. In 1872-74, the mortality from these diseases was 23.2 per 1,000 births. With some fluctuations, the rate fell gradually to 15.5 in the period 1905-09, a decline

of 7.7 points in 35 years, or one point every 5 years. From this period the fall was rapid. In the next 5 years, the mortality decreased by 5.5, points and in the last 4 years, by 4.4 points more—a little over one point every year. In 1915-1918 the rate was actually only 5.5, and in 1918, the last year in the group, only 3.2 per 1,000 live births.¹ From 1905-09 to 1918 the mortality from gastric and intestinal diseases was reduced by fourth-fifths.

The mortality from respiratory diseases in 1872-74 was 12.5 per 1,000 births. For 10 years it approximately maintained this rate, then decreased gradually in the next 20 years to 10.0 in 1900-04. From this point, the decrease became more rapid. In 1905-09 the rate was 8.4, in 1910-14, 5.8, and in 1915-18, only 4.6. During the last 15 years the rate has been cut in two. The rate of decrease during these last 15 years was over 3 times the rate of decrease during the preceding twenty.

The third group, the diseases of early infancy, does not show any such tendency. A slight increase appears from 23.6 in 1872-74, to 27.0. in 1900-04. From this point, a slight decrease occurred to 25.2 in 1915-18.

The fall in the trend of the mortality rate from diseases of early infancy suggests that preventive measures are beginning to be effective. It is possible, however, that this is due in part to a transfer of deaths from diseases of early infancy to "malformations," which shows an increase during the last two periods. The increase in deaths ascribed to malformations is probably to be accounted for by more accurate certification of cause, though the transfer may have been from other causes than diseases of early infancy. The further course of the rates will show what is the most probable explanation.

In the analysis of the fall in the infant mortality rate in New Zealand two periods may be distinguished. The first period is from 1872-74 up to about 1905, during which time the fall in the

¹ It should be mentioned in passing that the dates for changes as given do not pretend to be exact. In order to show more clearly the trend of the rates, averages for 5-year periods have been taken, and it is therefore difficult to state, if the average for 1905-09 is lower than for 1900-04, the exact year in which a decrease first took place. This is further complicated by fluctuations in climatic conditions. Even with no causes tending toward a reduction in infant mortality, the rates vary from year to year, with climatic conditions; and hence, if it is sought to find the exact point at which a decrease commenced, it is necessary to take account of climatic conditions during the period within which the decrease first appeared.

mortality from epidemic diseases, convulsions, tuberculosis, and ill defined causes was continuous and rapid, and the fall in the mortality from gastric and intestinal and respiratory diseases was slight. The second period is from about 1905 to the present time, during which the fall in the mortality from gastric and intestinal diseases has been proceeding at a rate five times as great, and that from respiratory diseases has decreased over 3 times as fast as during the preceding period. During these last 15 years, the mortality from gastric and intestinal diseases has been reduced to one-fifth its former rate, and that from respiratory diseases has been cut in half. Since about 1900, a very slight decrease in the mortality from diseases of early infancy is perceptible.

This decrease in infant mortality rates is not due merely to an improvement in birth registration, since in this case the rates from each cause of death would be affected uniformly. The analysis has shown that the decreases in the rates from different causes are quite different. Furthermore, compulsory registration of births in New Zealand dates from 1855, or 20 years before the period covered by these figures, while voluntary registration had been fairly satisfactory even before compulsory registration was enforced. Ninety-eight per cent of the people of the Dominion were born in British possessions, and consequently the population is homogenous, and accustomed to the requirement of birth and death registration. Birth certificates have been used in New Zealand as proof of age in entering school, securing employment certificates, and for other purposes, and the population is therefore thoroughly familiar with the need of adequate registration of births.

CONDITIONS FAVORING LOW INFANT MORTALITY

A brief summary of the general conditions in New Zealand which might have a bearing upon low rates of infant mortality is next in order.

The climate of New Zealand is exceptionally favorable to a low infant mortality rate. New Zealand is a country about one-thirtieth the size of the United States, consisting of two islands which are together approximately one thousand miles in length and one hundred miles in breadth. The breadth of course varies: At Auckland

on the North Island, the land is only 8 miles in width; the greatest breadth is not over 180 miles. The climate of New Zealand is therefore insular throughout, and the temperatures are almost everywhere moderated by sea breezes. The maximum temperature in summer in Auckland rarely rises above 81 degrees, and it is very little higher in the other principal cities. The coldest temperature in Dunedin, farthest south of the larger cities, rarely falls below freezing, and the coldest temperature on record is only 28 degrees. The consequence is that weather conditions in summer are extremely favorable to a low mortality from gastric and intestinal diseases, and the mildness of the winter is favorable to a low mortality from respiratory diseases. With such mild weather there is no tendency to live in close, over-heated rooms.

These favorable climatic conditions are accompanied by favorable housing conditions. Throughout New Zealand, even in the four large cities which range in size from about 70,000 to 130,000 population, dwelling houses are for the most part one-story bungalows or cottages, each set in its own plot of ground and provided with a lawn and garden. Tenement and even apartment houses, such as are so prevalent in American cities, are practically unknown in New Zealand. The buildings in New Zealand are mostly of wood, and in architecture unpretentious, but as generally in new countries there is plenty of space. There is comparatively little manufacturing, and even in the large cities there is little or no pollution of the atmosphere from smoke.

In this connection may be mentioned also the comparatively favorable economic level of the population. Little or no real poverty exists. The average rate of wages is high in comparison with the cost of living. Unskilled workmen probably receive somewhat more in proportion to skilled workmen than in this country. The proportion of homes owned is similar to that in this country as a whole; but the proportion of homes owned in the four large cities is above that in almost any of the large cities in this country, being slightly more favorable than the proportion in Los Angeles.

In regard to improvements in housing and economic conditions in general, it is difficult to bring satisfactory evidence. Presumably the conditions of living have been growing easier as the privations and discomforts of pioneering have given place to the conveniences

of a more settled life. The growth of cities has until recently at least, taken place without any serious crowding of population into inadequate quarters. In regard to wages, it should be mentioned that an era of prosperity up to about 1885 was followed by a prolonged depression which lasted for 10 or 15 years, during which emigration exceeded immigration; since that date prosperity has returned and immigration has been flowing into New Zealand except when prevented by war conditions.

In 1893 a system of compulsory conciliation and arbitration was adopted to regulate wages without the necessity of resorting to strikes. Under this system minimum wages are determined by conciliation boards or councils, or by the arbitration court. This has brought about an increase in wages of the unskilled and lowest paid labor. The evidence goes to show that the wages of unskilled labor have risen relatively to skilled labor. From 1900 to 1918 there has even been a slight increase in wages as compared with cost of living.

In this connection mention should also be made of the land legislation adopted in 1893 and later by which provision was made for leasing on liberal terms lands still held by the Crown, and in particular for splitting up large estates for the benefit of persons seeking to take up land.

The favorable conditions already mentioned may go far toward explaining the low infant mortality rate in New Zealand. Favorable climate alone, however, cannot explain the decrease in the rate. It should be interpreted, rather as a condition in which measures of prevention will produce larger results, and, therefore, appear more effective, than they would in communities where the climate was not so good. The favorable housing and economic conditions may be interpreted in part in the same way, as presenting favorable conditions in which direct measures of prevention will produce large apparent results; but in so far as improvements in these conditions have taken place, they may themselves be factors in the decrease in the rates.

FACTORS IN REDUCTION OF INFANT MORTALITY

Among the general measures of public health and welfare, three in particular merit especial consideration in connection with

the reduction in infant mortality. These are the laws regulating midwives and nurses, and establishing State Maternity Hospitals; the protection of children boarded out apart from their mothers afforded by the Infant Life Protection Act; and the infant welfare work of the Royal New Zealand Society for the Health of Women and Children.

MATERNITY AND NURSING CARE

Beginning in 1901 the Department of Public Health in New Zealand has paid special attention to the problem of provision for maternity and nursing care. In 1901 the Nurses' Registration Act was passed. This Act set up standards for nursing training in connection with optional registration of approved nurses. A four years' course of training in an approved hospital was required for registration. Though registration of nurses is not compulsory, registered nurses are given preference in filling vacancies in hospitals under the control of Hospital and Charitable Aid Boards. Since the law was enacted the number of nurses on the register has gradually increased until in 1918, 2,195 nurses were registered.

Registration of midwives was first required under the Midwives' Act of 1904. Persons who had already been practicing for a period of at least 3 years at the time the law went into effect were entitled to registration without examination, provided they satisfied the registrar they were of good character. The Act provided for the granting of certificates to registered nurses who had attended lectures at a State Maternity Hospital or other approved institution for a period of at least 6 months, and to pupil nurses who had attended such lectures for a period of at least 12 months, provided in all cases that they had attended at least 20 cases of confinement and passed a satisfactory examination.

Registration of midwives is compulsory. Notice of intention to practice must be given annually to the registrar. Registration may be cancelled in cases of conviction for an indictable offence, or in case of malpractice or misconduct. The Board of Health publishes rules for the guidance of midwives, which set forth in detail the equipment required and the conditions under which medical help must be sent for. If a midwife neglects or refuses to send for

a doctor in the cases specified her registration as midwife is liable to be cancelled.

Persons not registered as midwives who practice or use the name of midwife are liable to a fine not exceeding 30 pounds (\$146). This penalty does not apply to assistance rendered in cases of emergency. The Department of Health, when it receives information through the office of registrar of births or in some other way that a person not registered as a midwife has attended at a confinement, notifies the person of her liability to fine under the law and may prosecute the woman unless she can show that the case was in the nature of an emergency.

In 1918 the total number of registered midwives was 1,519, of which over half, 888, had been trained and certified since the passage of the Act.

Under the Midwives' Act of 1904 the establishment of one or more state maternity hospitals was authorized. They were designed to provide facilities for the training of midwives and maternity nurses. The first of these state maternity hospitals, or St. Helen's Hospitals, as they are called, was opened in Wellington in the year 1905. Three others were opened during the next two years in the other principal cities, and recently two more have been established. Wives of working men who have incomes of less than £4 (\$19.44) a week may avail themselves of the hospital services.

These hospitals not only provide inexpensive care for the confinement period, but also do a small amount of prenatal work and of postnatal care for infants. These phases of their work, however, are not systematic.

During the year ended March 31, 1919, 1,333 confinements took place in the six State Hospitals, and 521 confinements which occurred outside of the hospitals were attended by hospital nurses. Of the total births in New Zealand, about 1 in every 23 took place in a St. Helen's Hospital; including those outside the hospitals but attended by their nurses, about 1 in every 16 was attended by a St. Helen's nurse.

The proportion of births attended by nurses from these institutions is much higher in the cities themselves. Comparing the confinements in the hospitals with the number of births in the urban centers, it would appear that 18 per cent, or slightly over one-sixth,

of the births were attended by St. Helen's nurses. This comparison, however, overstates the true proportion, since in the figures for the births in the urban centers births to mothers who live outside the urban areas are deducted from the births assigned to the cities. Many mothers come in from the surrounding country districts to avail themselves of the hospital accommodations of the cities.

The work of the St. Helen's Hospitals and the gradual raising of the level of maternity care is a factor which may, perhaps, be related to the decrease since 1900 in the mortality from the diseases of early infancy.

INFANT LIFE PROTECTION

The second important phase of preventive and welfare work is the so-called Infant Life Protection. The Infant Life Protection Act was first passed in 1896. It provided that infants under 4 years of age boarded out for reward apart from their mothers should be placed only in licensed homes.

The powers of licensing and inspection were at first given to the police. It might be mentioned that this Act was first passed on account of the discovery of a flagrant case of baby-farming in which, after the premium had been paid, the infants boarded out had been practically murdered.

In 1906, in order to improve the system of licensing and inspection, these powers were transferred from the police to the Education Department. At the same time the age of infants to whom the provisions of the Act applied was increased to 6 years. Under the Education Department the inspectors are all trained women with nurses' certificates.

The numbers of children boarded out in foster homes ranged from about 700 to 900 during the early years of the Act, and since the raising of the age limit, the numbers have risen to about 1,200.

The great majority of these children are illegitimate and a large number of them are under 12 months old. Of all the illegitimate children born, about one-fifth are boarded out, and are therefore brought under the protection of this Act. Between 4 and 5 per cent of all births are illegitimate.

On account of the absence of data, no comparison of infant mortality can be made for the periods before and after the enactment of this legislation.

During the period in which the law was administered by the police, a slight fall in mortality among the children boarded out appears to have taken place. Since the work of licensing and inspection was taken over by the Education Department the mortality has been largely reduced. The deaths per 100 children under 6 years of age in foster homes decreased from 2.6 in 1908 to 0.4 in 1918. These rates, of course, are not infant mortality rates, but probably they give a fair indication of the decline in mortality among children under 1 year, since for the few years for which I have thus far been able to analyze the figures, practically all the deaths are of children under 1 year, and the proportion of infants under 1 year does not vary much from year to year.

No statistics of mortality among all illegitimate children are available for New Zealand. But in other countries the mortality among the illegitimate is two or often three times as high as among the legitimate. Probably the infant mortality rate among illegitimate infants in New Zealand during the period under study has declined even more than among legitimate infants. In this connection, it might be mentioned that in New South Wales in Australia, where a system of Infant Life Protection similar to that in New Zealand has been in force since 1891, with amendments in 1904 and changes in regulations at other times, the mortality rate among illegitimate infants has fallen from 276 deaths per 1,000 births in the period 1895-99 to 108 in 1919.

WORK OF THE ROYAL NEW ZEALAND SOCIETY FOR THE HEALTH OF WOMEN AND CHILDREN

Probably the most important of the preventive measures is the work of the Royal New Zealand Society for the Health of Women and Children. This society was organized in Dunedin in 1907 by Dr. Truby King, and was formed to carry on work which he had already commenced for the better care of very young children. The work of the society has been fully described in an early bulletin of

the Children's Bureau,² and doubtless many of the members of this association have heard of its activities from Dr. King himself, who passed through America some two years or more ago on his way to take up the organization of similar work in England.

The society is organized in a number of independent branches which meet in conference or council at stated intervals. The central council is mainly for the purposes of conferences or discussion, but also considers the policy of the society as a whole, especially in regard to co-operation with the Health Department. It receives subsidies granted by the Health Department and distributes them to the local branches. Except for a paid secretary of the central council, and for the nurses, all the work of the society is volunteer work.

An important feature of organization is decentralization. Each local branch is independent financially and in the management of its local work, though it keeps in touch with other branches through the central conference. They are managed by special committees consisting of 15 or 20 members. The branches depend for their support, except for the subsidies for the payment of the nurses, as already mentioned, upon subscriptions and donations, raised in the locality. In this way the active interest and co-operation of the localities is secured and maintained. Outlying branches in rural communities which can not afford to maintain a nurse of their own often secure part time services of the nurses in nearby cities.

The branch at Dunedin, the one which was formed first, maintains a special hospital for the training of all the nurses employed in the various branches.³

A very important feature of the work of the society is the training of its nurses. Plunket nurses, as they are called in honor of Lady Plunket, wife of a former Governor of New Zealand who took great interest in the work of the society, are all registered general or maternity nurses who have had a sort of post-graduate training at a special baby hospital maintained by the society at

² New Zealand Society for the Health of Women and Children. *An Example of Methods of Baby-Saving Work in Small Towns and Rural Districts*. Children's Bureau, Publication No. 6, Washington, 1914.

³ Two other branches, Christchurch, and Wanganui, also maintain special hospitals for babies, but do not train Plunket nurses. Nurses without previous training but with a full year's training in these hospitals are designated as Karitane nurses.

Dunedin. In this hospital babies are received for dietetic treatment only. Nurses are given careful and thorough instruction in the general methods of care, particularly in the preparation of so-called humanized, a special kind of modified, milk, in clothing, hours of sleep, and other details. The period of training is 3 months for nurses with general training and 6 months for nurses with special maternity training only.

In this connection it is of interest to note that Dr. Margaret Harper, a physician sent by the Society for the Welfare of Mothers and Babies of New South Wales to study the work of the Plunket Society, commented very favorably upon the thorough training given to nurses.

The principal lines of work followed are maintenance of infant welfare or baby health centers, at which the specially trained Plunket nurses give free advice in regard to all matters relating to the care of babies, except purely medical matters. The mothers bring their babies to the centers for advice in regard to diet; from the centers the nurses also make visits to the homes. The policy of the society is everywhere to encourage breast feeding, but if that is not possible, humanized milk is recommended and demonstrations as to the method of preparing it are given. The nurses never prescribe for sick infants but advise the mothers to call a physician. An important feature is the general instruction given in regard to proper clothing, fresh air, and hours of sleep. Besides the individual work with mothers and babies, the society supplies a column which is printed weekly in most of the newspapers in New Zealand. The society also distributes, at nominal cost, booklets and pamphlets in regard to the care of infants. One of these pamphlets, "The Expectant Mother and Baby's First Month" has been taken over and published by the Health Department, and is distributed free of cost to every mother on the registration of the birth of her baby.

Another feature of the work is that all apparatus and methods used are so simple that any mother can secure and apply them in her own home.

It might also be mentioned that the society does not confine its work simply to the children of the poorer classes, but on the contrary, urges mothers in all classes to use the services of the Plunket nurses. The work of the society is, therefore, well known and

appreciated among the well-to-do—"the upper classes"—and the desire to imitate these classes becomes an influence in spreading the work among those not so well off. It also helps in removing any feeling that the work of the society is on a charitable basis.

In regard to the growth and extent of the work of the society, very little statistical information is available. The society has published annual reports of its work, but the statistics presented are somewhat fragmentary.

Branches were organized in 1907 and 1908 in the four principal cities. The number of main branches at which Plunket nurses are stationed has gradually increased until in March 1920, it was 30; in addition there were 45 sub-branches in outlying districts. Local committees were formed in a number of other smaller places. The number of Plunket nurses gradually increased to 28 in 1916, and 46 in 1920.

In the year ended March 31, 1919, the total number of babies cared for was 15,951, a figure which increased to 19,142 in 1920. This figure, however, includes not only infants brought for the first time under the care of the society, but also infants cared for at any time during the year, who had also been under care in a previous year. Babies are usually first brought under care before they are one year old, and very rarely after passing the first birthday; but after having formed the habit of consulting the Plunket nurses, mothers frequently bring their babies, as they are indeed urged to do, at intervals until they reach two years of age.

The number of infants brought under care for the first time may fairly be compared to the number of births to show roughly the proportion of infants born in New Zealand who are brought directly under the influence of the Plunket nurses. The figure for 1919, furnished through the courtesy of the Health Department to which the society makes monthly reports, was 6,454, which, when compared with the total number of births for that year, gives 26.4 per cent, or over one-fourth of all the New Zealand babies cared for by the society. The proportion is much higher in the cities in which most of the work is centered. But even outside the four principal cities, approximately one-sixth of all births come directly under the care of the Plunket Society.

It should be pointed out that the infants who are brought directly under the supervision of the Plunket nurses—twenty-six per cent of the infants born—probably include those most in need of such care; furthermore, a large proportion of the remainder are doubtless reached by the educational measures of the society and by the distribution of pamphlets.

Comparison with similar data for American States is somewhat difficult. Most of the infant welfare work in America is concentrated in cities. Even in these, with a few notable exceptions, the proportion of infants born who are affected by such work probably does not reach the proportion in New Zealand. It should be emphasized, however, that the problems in the American cities are much more difficult than in New Zealand, not only on account of the much higher temperatures in summer, and lower temperatures in winter, but also on account of the large proportion of foreign born, the much greater congestion of population and other factors.

In summary, then, the experience of New Zealand shows in a striking manner the efficacy of preventive measures—baby health centers, protection for infants boarded out, and to a less degree, provision of adequate maternity care—in reducing mortality in infancy. Probably we have in this country experience on a large scale which would be equally conclusive, but unfortunately we lack the statistical data for full analysis. New Zealand not only has an extensive system of preventive measures in force, but has also reliable statistics by means of which the effectiveness of these measures can be tested.

■

VARIATION IN THE RATE OF INFANT MORTALITY IN THE UNITED STATES BIRTH REGISTRATION AREA ¹

RAYMOND PEARL, Ph.D., Baltimore

Until recently it has been impossible to discuss on any accurate or satisfactory basis the infant mortality of any considerable portion of the United States. This difficulty has arisen from the fact that except in a few localities, notably some of the New England States, there has been in the past no adequate system of birth registration. The most accurate practical method of stating the force of infant mortality is to relate the number of deaths of infants under one year of age in a given time unit to the number born in the same time unit. Consequently, one needs accurate birth statistics before infant mortality can be adequately discussed.

It is a matter of great satisfaction to everyone interested in the subject of infant mortality that at last there is well established a Birth Registration Area for the United States, and four annual reports on Birth Statistics of this area have been issued to date by the Census Bureau. We are well embarked now on the policy of adequate birth statistics for the country and unquestionably within a comparatively few years the Birth Registration Area will cover the major portion of the country as the Death Registration Area now does. In the short period since the Birth Registration Area has been established its growth in extent has been gratifyingly rapid. The first report on birth statistics for the year 1915 comprised data from an area including approximately 31 per cent of the population of the country. The 1918 birth statistics report gives data from an area including 53 per cent of the population. This furnishes a sufficient volume of material so that one may begin the mathematical analysis of some of the problems of infant mortality with some assurance of reaching valid conclusions.

¹ Papers from the Department of Biometry and Vital Statistics, School of Hygiene and Public Health, Johns Hopkins University, No. 18. This paper, which is a preliminary and condensed abstract of a much more detailed investigation of the subject, shortly to be published elsewhere.

The purpose of the present paper is a modest one. It aims simply to present briefly some of the facts of variation in rate of infant mortality in different geographic or demographic units of the population. The first step in the solution of any problem is obviously a clear definition of the problem itself. We shall see, as we pass from city to city, town to town, or rural county to rural county, that the rate of infant mortality varies greatly. In a hypothetical commonwealth where the most perfect administrative control over infant mortality possible or conceivable had been attained, this variation would largely disappear, the only residue of diversity between communities in respect of infant mortality being such as arose purely by the operation of chance, that is, from random sampling, or from uncontrollable environmental factors, such as climate or soil. Now, with the actually existing condition of variation between different communities in respect of infant mortality, it is obvious that there must be particulate and presumably determinable reasons for each particular difference which exists. Operating on a basis largely of empiricism and *a priori* reasoning, efforts to reduce infant mortality have in the past been attended with considerable success. Also, with the advance of general sanitation the death rate under one year of age has fallen enormously. Greenwood^{*} quotes some interesting figures on the point from Farr, which we may well reproduce here to show how enormous has been the improvement.

Period	1730-49	1750-69	1770-89	1790-1809	1810-29
Percentage Deaths under 5 years....	74.5	63.0	51.5	41.3	31.8

But after such a decline as these figures indicate the continuation of the business offers a difficult problem to the administrative official, whose procedures are grounded essentially only on the two pedestals of what he thinks *has* worked in the past and what he believes logically *ought* to work. The easy part of the conflict has happened and is in the past. To continue the good fight with the same relative measure of success, one presently must needs know more precisely than is now known the pattern of the causal nexus which controls and determines the rate of infant mortality. And it is *real* knowledge, not *a priori* logic, that is wanted. Let a

^{*} Greenwood, M. Infant mortality and its administrative control. *Eugenics* Rev. Oct. 1912, pp. (of reprint) 1-23.

single example illustrate. It has been maintained that excessive infant mortality is primarily the resultant of the so-called "degrading influences" of poverty, and such a contention stirs a warmly sentimental feeling of agreement in the minds of the well-meaning public zealous to do good. This relationship obviously *ought* to be true, therefore to a too-common type of mind it must be and is true. But Greenwood and Brown^{*} in what may fairly be regarded the most thoroughly sound, critical and penetrating contribution which has yet been made to the problem of infant mortality are unable "to demonstrate any unambiguous association between poverty . . . and the death rate of infants."

The plain fact is that before control or ameliorative measures can be applied with the maximum of efficient economy to the general public health problem of infant mortality we must know a great deal more than we now do about the factors which induce spatial and temporal differences in the rate of that mortality. But first we must get an adequate conception of the magnitude and character of the differences themselves. Let us, therefore, turn to the examination of the facts regarding variation in infant mortality in the United States Birth Registration Area.

Variation Data

In this work we have studied the variation in the rate of infant mortality (deaths per thousand births) for the following groups:

1. Total population in cities of population of 25,000 or over in 1910.
2. Total population in cities of under 25,000 population in 1910.
3. Total population in rural counties of registration states.
4. White population in cities of population of 25,000 or over in 1910.
5. White population in cities of under 25,000 population.
6. White population in rural counties of registration states.
7. Colored population in cities of population of 25,000 or over in 1910.
8. Colored population in cities of under 25,000 population.
9. Colored population in rural counties of registration states.

In order to make possible a better appreciation of the nature of the frequency distributions Figure 1 has been prepared. This shows for the year 1918 the frequency polygons for the total popu-

^{*} Greenwood, M. and Brown, J. W. An examination of some factors influencing the rate of infant mortality. Jour. Hyg. Vol. XII, pp. 5-45, 1912.

lation of (a) cities of 25,000 and over, (b) cities of under 25,000, and (c) rural counties.

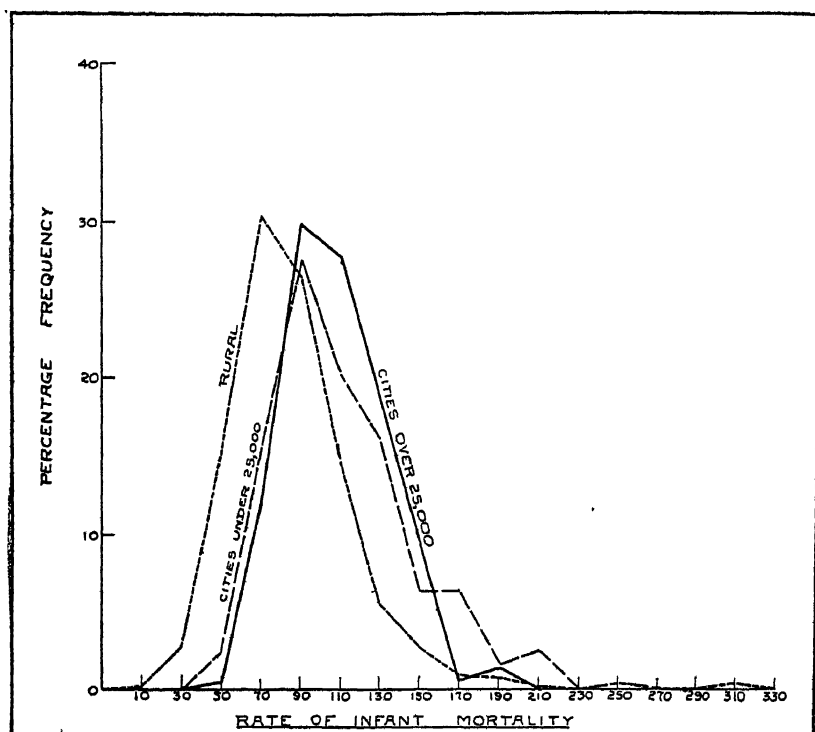


Fig. 1. Frequency polygons showing variation in the rate of infant mortality in 1918 for the total population of (a) cities of 25,000 and over, (b) cities of under 25,000, and (c) rural counties.

This diagram is fairly representative of all the distributions.

The most striking immediately observable feature of these distributions is the great range of variation which they exhibit. For example, in 1918 the 236 cities of under 25,000 inhabitants showed infant mortality rates ranging all the way from the class 40-59 deaths per thousand births to the class 300-319 deaths per thousand births. The range of variation is even greater than this in the case of the distributions for the colored population. These extraordinarily large ranges of variation demonstrate perhaps more clearly than could be done in any other way the opportunity which exists for effective administrative control and reduction of infant mortality. If there are communities, as there are in plenty, show-

ing infant mortality rates under 100 deaths per thousand births it suggests at once that it is possible if the right measures are systematically and effectively applied to reduce the infant mortality in those other communities showing very high rates to something like the level of these at present more fortunate communities.

TABLE I.
Constants of variation in rate of infant mortality
(deaths under 1 per 1,000 births)

Group	Mean ²	Median ²	Standard deviation ²	Skewness
Cities over 25,000 ¹ , Total, 1915.....	104.49 ± 1.78	102.76	26.14 ± 1.26	+ .3148
" " " " 1916.....	102.53 ± 1.67	103.24	24.69 ± 1.18	-.0786
" " " " 1917.....	99.58 ± 1.32	98.00	23.45 ± .93	+ .2455
" " " " 1918.....	107.78 ± 1.41	105.50	25.07 ± 1.00	+ .3237
Cities under 25,000 ¹ , Total, 1915.....	100.98 ± 1.68	97.95	30.81 ± 1.18	+ .1934
" " " " 1916.....	104.23 ± 1.75	101.03	32.38 ± 1.24	+ .2217
" " " " 1917.....	99.24 ± 1.32	94.74	29.94 ± .93	+ .4840
" " " " 1918.....	111.61 ± 1.66	104.17	37.78 ± 1.17	+ .5625
Rural counties, Total, 1915.....	83.07 ± .85	79.54	23.95 ± .60	+ .3204
" " " " 1916.....	85.28 ± .90	82.15	25.94 ± .63	+ .3536
" " " " 1917.....	82.01 ± .52	78.96	25.71 ± .37	+ .2838
" " " " 1918.....	84.43 ± .57	80.97	28.40 ± .40	+ .4328
Cities over 25,000 ¹ , White, 1917.....	92.22 ± 2.02	92.14	15.90 ± 1.43	....
" " " " 1918.....	102.59 ± 2.00	99.23	15.42 ± 1.42	....
Cities under 25,000 ¹ , White, 1917.....	98.46 ± 2.75	97.50	20.82 ± 1.95	....
" " " " 1918.....	114.62 ± 4.17	113.33	31.49 ± 2.95	....
Rural counties, White, 1917.....	86.21 ± 1.07	84.24	24.15 ± .76	+ .1799
" " " " 1918.....	85.90 ± 1.27	83.75	28.90 ± .90	+ .2802
Cities over 25,000 ¹ , Colored, 1917.....	202.59 ± 8.88	194.00	68.45 ± 6.28	....
" " " " 1918.....	216.67 ± 11.15	214.00	85.87 ± 7.88	....
Cities under 25,000 ¹ , Colored, 1917.....	213.08 ± 9.92	228.00	74.96 ± 7.01	....
" " " " 1918.....	217.69 ± 11.46	225.00	86.65 ± 8.10	....
Rural counties, Colored, 1917.....	184.76 ± 2.55	127.25	57.37 ± 1.80	+ .4984
" " " " 1918.....	147.26 ± 2.92	134.59	66.15 ± 2.06	+ .5819

¹ In 1910.

² In concrete units, i. e., rate of deaths under 1 per 1,000 births.

In Table I are presented the chief physical constants⁴ of the distributions of variation in infant mortality. These constants have been determined by the method of moments from the original raw data.⁵

⁴ For a very brief and summarized introduction to the modern mathematical treatment of frequency curves see Pearson, K., "Tables for Statisticians and Biometricians," 1914, pp. ix to lxx. References to the basic literature on the subject will be found there.

⁵ I am greatly indebted to my assistant, Mrs. Charmian Howell, for aid in the arithmetical work of this paper.

The constants tabled are:

1. The arithmetic mean.
2. The median. This measures the value above and below which exactly half of the variates occur.
3. The standard deviation. This constant measures in absolute units the degree of "scatter" or variation exhibited by the distribution.
4. The skewness. This constant measures the degree of asymmetry of a frequency distribution. If a distribution is perfectly symmetrical on both sides of the mean so that if folded over upon the mean as an axis the two limbs would exactly coincide, the value of the skewness is zero.

From the data presented in Table I. the following points are to be noted:

1. There is no certainly significant decline in the mean value of the rate of infant mortality during the four years covered by these statistics in any of the demographic units considered.

2. In 1918 there was a general tendency towards an increase in the mean rate of mortality over that which obtained in 1917. This increase is unquestionably to be attributed to the influenza epidemic of the autumn and winter of 1918. A careful examination of the rates by months will convince one that the mortality of infants increased very materially during the period of the epidemic. Whether this increased number of deaths was truly to be charged to influenza does not concern us here. The important fact is that the rate of infant mortality markedly increased coincidently with the existence of the epidemic. It is noteworthy that this increase in the infant mortality rate in 1918 is practically confined entirely to the cities. The rural counties, whether for white or colored or total population, show little or no change in 1918 as compared with 1917.

3. There is no unequivocal difference in the mean rates of infant mortality in the larger as compared with the smaller cities. Considering the largest differences in mean rates for total populations in cities of 25,000 and over as compared with cities of under 25,000 there is no difference which is as much as even three times its probable error.

4. The mean rates of infant mortality are notably smaller in the rural than in the urban areas. This fact has, of course, long been well known. The first writer on vital statistics, in the sense in which we now understand that subject, Captain John Graunt,

more than 250 years ago pointed out that rural communities exhibited generally a lower rate of mortality than urban communities. The difference between urban and rural rates of infant mortality is reflected just as clearly in the high absolute rates of the colored population as it is in the lower rates of the white population.

5. The mean rates of infant mortality are, roughly speaking, something like twice as high for the colored population as for the white population in each of the demographic units considered, and at all times. This again is a fact in general well known, but here we have precise figures on the point, with probable errors, which show definitely how tremendously poorer the negro baby's chances of surviving the first year of life are than the white baby's.

6. The cities of over 25,000 exhibit distinctly less variation in respect of infant mortality than do either the smaller cities (under 25,000) or the rural counties. The smaller cities and the rural counties exhibit about the same degree of variation relative to their means, but absolutely, in terms of standard deviation, the rural counties show less variability than the cities under 25,000. The colored distributions exhibit a much higher degree of variation in respect of infant mortality however measured, whether absolute or relative, than do the white populations. In general, it may fairly be assumed that the greater the variation exhibited by a given class of the community in respect of infant mortality, the greater the chance of effective control and reduction of the average infant mortality by administrative measures. There can be no question that there is no field which offers so great opportunities in this direction as the colored population.

7. The skewness is seen to be positive in sign in every case but one. In that case (1916, cities over 25,000 total) the skewness is not significant in comparison with its probable error. With this exception the curves tend to tail off more gradually and farther towards the right end than towards the left end of the range. In other words, the rate of infant mortality in these different American demographic units tends generally to distribute itself in a substantially unsymmetrical fashion about the mean, extremely high rates occurring more frequently than correspondingly low rates. This fact might perhaps be taken to indicate that the task confronting the administrative control of infant mortality in the United States, and

yet to be accomplished, is even greater than what has already been accomplished in the past, great and worthy of commendation as that is.

Data on the Limitations to Administrative Control of Infant Mortality.

We have seen that there is a high degree of variation in the rate of infant mortality as we pass from community to community. Some communities have infant mortality rates several times higher than those prevailing in other communities of the same size. This creates the presumption at once that proper administrative activity might reduce the rates of these abnormally high communities to a level commensurate with those found in the lower group. It is the purpose of this section of the paper to examine this presumption critically.

At the outstart it is evident that there are some causes of infant mortality which are, in their very nature, beyond hope of effective practical human control. Thus, children born with marked congenital hydrocephalus will presently die, in spite of anything the health officer can do, no matter how active and intelligent he may be. There are other causes of death falling in essentially the same category in this respect.

Not as any final or dogmatic settlement of the matter, but rather as a tentative first approximation made for the purpose of seeing whether any suggestive lead may appear, I have ventured to attempt to classify the principal causes of mortality in the first year of life into two groups. The first of these groups aims to include those important causes of infant mortality which are either (a) actually now effectively controlled by the efforts of health officials, either directly, or indirectly through general sanitary and hygienic improvements, or (b) are obviously capable theoretically of control and amelioration if sufficient pains be taken. The second group aims to include those causes of infant deaths which are either (a) in the nature of the case, out of the range of effective practical, *direct* control or amelioration, or (b) are not in fact now controlled in any appreciable degree. Let us see what such a classification, to a first approximation, looks like.

Tentative Classification of Principal Causes of Infant Mortality.

- | | |
|--|--|
| <p>A. Causes of death actually now well controlled, or capable theoretically of direct control in greater or less degree:</p> <ul style="list-style-type: none"> Measles Scarlet fever Whooping cough Diphtheria and croup Dysentery Erysipelas Tetanus Meningitis Convulsions Acute bronchitis Pneumonia Bronchopneumonia Diseases of the stomach Diarrhea and enteritis External causes | <p>B. Causes of death not controlled</p> <ul style="list-style-type: none"> Tuberculosis of the lungs Tuberculous meningitis Other forms of tuberculosis Syphilis Organic diseases of the heart Malformations Premature birth Congenital debility Injuries at birth |
|--|--|

One realizes that it is a bold thing even to set down such a classification as the above. It is certain to stir up the rancor of extremists in both directions. But extremists are nearly always wrong. Calm and unprejudiced persons will admit that some such classification as that here attempted is possible. Perhaps some further discussion of this classification may make clearer its point of view, and may win at least that measure of agreement with it which will at least permit the consideration of the discussion of its consequences which follows.

Taking column A first, presumably no competent health official would deny that the first diseases in the list (scarlet fever, whooping cough, diphtheria and croup, and dysentery) have been, can be, and are in greater or less degree effectively controlled in respect both of their incidence and their mortality. With this same group clearly belongs also diarrhea and enteritis, and convulsions, on the justifiable assumption that in the vast majority of cases convulsions in infants are consequent upon violent enteric infections, which clearly belong in the controllable class. Diseases of the stomach, as causes of death *under one year of age*, again in the vast majority of cases undoubtedly mean infection—filth diseases in short—which come in the same category, so far as concerns control, as diarrhea and enteritis. Regarding the rest of the diseases in the A group (erysipelas, tetanus, meningitis, acute bronchitis,

pneumonia, bronchopneumonia, and external causes) the point of view of which led to their inclusion here is as follows: If the environmental conditions surrounding the infant in the community and in the home, and the care given it, were made as favorable as they might be made, and actually are in the homes of the hygienically intelligent well-to-do, the death rate from each of these causes would be enormously reduced relatively in comparison with what it actually is. As a matter of fact visiting child welfare nurses are doing a mighty work in just this direction in many communities. They teach parents how to care for their infants, protect them from these infections, and nurse them to a non-fatal issue in many cases if they do get infected.*

Now for the B column. The first three items are the various forms of tuberculosis. The fanatic will no doubt promptly assert that nothing is so easily and readily controllable as these. But let us make haste slowly and remember certain things: First, that we are here talking about *deaths* under one year of age, that is *fatal* tuberculosis in the first months of life; and second, that our classification premises, in specific and stated terms, *direct control*, that is control through agencies acting directly upon the infant or his environment. *Theoretically* it is possible to reduce materially the mortality under 1 from tuberculosis. If every child born to tuberculous parents was instantly and ruthlessly removed from the home from the moment of birth, and reared in an environment where no contact with tubercle bacilli was possible, unquestionably enormously fewer infants would develop tuberculosis in the first year of life than now do. A recent paper by Bernard and Debré[†] furnished an instructive example, showing in a single case how a child removed at 1½ months from its tuberculous mother, threw off completely its own tuberculosis. But *practically* it is perfectly clear that neither in the past has there been, nor in the present is there, nor probably for some time in the future will there be rigid isolation of offspring from tuberculous parents to an

*No one who knows at first hand what child-welfare public health nursing is actually accomplishing in these directions will question the putting of these diseases in the controllable column. Their mortality rate can be materially reduced if communities will take the trouble to go intelligently about it.

[†]Bernard L., and Debré, R. Bull. Soc. Med. des Hosp. T. 44, p. 1652. 1920. Rev. in Jour. Am. Med. Assoc. March 19, 1921, p. 824. See also paper in the present volume of these Transactions, on "Prevalence and Management of Tuberculosis in Infancy," by T. C. Hempelmann, p.

extent or degree sufficient to influence the infant mortality from tuberculosis, in the entire Registration Area of the United States, by as much as one unit of the death rate. The mortality from tuberculosis under 1 year of age has to be sure declined during the past 40 or 50 years but no more rapidly than the general curve of tubercular mortality at all ages. But many persons fail to find any evidence that control measures have had anything to do in bringing down the general tuberculosis death rate. In this connection a recent paper by Given^{*} on the influence of administrative or control measures upon the course of tuberculous mortality in general is interesting. He says: "Statistics show us that, in spite of all that has been said and done for the prevention of tuberculosis, our efforts in regard to pulmonary tuberculosis have not been attended with the anticipated success. The decline in mortality from this cause dates from 1838, and has continued steadily ever since down to 1913. Koch's discovery of the tubercle bacillus in 1882 does not appear to have affected it in any way."

I know of no evidence that anything now being done is sensibly influencing the rate of mortality from tuberculosis in infants under 1. Some individual physicians may have been particularly successful with a small number of tuberculous babies under his care. But statistically it means little in the toll of 2,501 deaths under 1 which tuberculosis is recorded to have taken in the Registration Area of the United States in 1918. Actually if the truth were known the total would be much larger even than this.

About fatal congenital organic diseases of the heart, congenital malformations grave enough to be fatal in the first year of life, and fatal congenital debility there will probably be no dispute. The mortality from fatal congenital syphilis is again, like tuberculosis, *theoretically* controllable.^{*} But *practically* and in fact, is it controlled? The writer feels extremely doubtful about it.

Regarding premature birth, and injuries at birth, much the same reasoning applies, but with the additional consideration that presumably intelligent prenatal education of the mothers and improvement of prenatal environmental conditions would reduce

^{*} Given, D. H. C. Some deductions from the statistics on the prevention of pulmonary tuberculosis. Bull. Med. Jour. Feb. 12, 1921, pp. 225-226.

^{*} Cf. Jeans, P. C. Syphilis and Infant Mortality. Trans. Am. Assoc. for Study and Prev. Inf. Mortality. Vol. IX, p. 155.

these mortality rates in some unknown, but probably not large degree. Actually, however, there is no tangible evidence that these causes of death are in effect administratively controlled in any appreciable degree in this country at this time.

Finally it should be said that one occasionally important cause of infant mortality is omitted entirely from the classification. This is influenza. The reason for the omission is simply that the statistical discussion which follows is based upon 1918 mortality figures

TABLE II—Showing the deaths under one year of age per 1,000 living births for (A) controllable, and (B) non-controlled causes of death in certain American cities of 100,000 population or over in 1910.

City	Births in 1918	Deaths under one year				
		A. From causes control- lable in some degree	A. Rate of control- lable deaths	B. From causes not con- trolled	B. Rate of not con- trolled deaths	Rate per 1,000 births from all causes
Bridgeport	4,910	226	46	224	46	100
New Haven	4,869	190	39	200	41	90
Washington	8,162	399	49	450	55	112
Indianapolis	6,196	270	44	269	44	93
Louisville	4,368	239	55	210	48	112
Baltimore	15,143	1,225	81	847	56	149
Boston	20,062	1,092	54	984	49	115
Cambridge	2,672	144	54	111	42	107
Fall River	3,646	403	111	183	50	180
Lowell	3,286	302	92	180	55	159
Worcester	5,238	212	40	248	47	97
Detroit	27,036	1,296	48	1,199	44	100
Grand Rapids	2,836	110	39	119	42	86
Minneapolis	3,704	198	23	358	41	73
St. Paul	5,155	160	31	185	26	87
Albany	2,153	96	45	122	57	115
Buffalo	13,989	866	62	653	47	121
Bronx Borough	16,763	496	30	669	40	75
Brooklyn Borough	49,515	2,232	45	1,889	38	90
Manhattan Borough	59,227	2,855	48	2,456	41	97
Queens Borough	9,467	389	41	417	44	93
Richmond Borough	2,677	113	42	139	52	106
Rochester	6,855	233	41	276	40	92
Syracuse	4,352	265	61	206	47	119
Cincinnati	7,913	326	41	404	51	104
Cleveland	20,699	963	47	790	38	98
Columbus	4,464	163	37	255	57	101
Dayton	3,232	109	33	143	44	87
Toledo	5,524	186	34	270	49	94
Philadelphia	43,408	2,876	66	1,993	46	124
Pittsburgh	15,875	1,179	74	805	51	139
Scranton	3,139	263	84	141	45	141
Providence	6,354	342	54	352	55	123
Richmond, Va.	3,840	199	52	235	74	147
Seattle	5,910	93	16	218	37	61
Spokane	2,194	55	25	90	41	77
Milwaukee	11,090	574	52	488	44	106

and inasmuch as that was a year in which the influenza mortality was abnormally heavy owing to the epidemic it was thought that it would be unfair to the general relationships exhibited to include this epidemic mortality. Presumably normal endemic influenza should be in the A group, on the same reasoning as the pneumonias.

With so much of explanation as to the point of view of this classification let us examine some of its statistical consequences. These consequences I have tested in a preliminary way upon the birth and death data for certain large cities and the registration states in 1918. There were found to be 37 large cities included in both Birth and Death Registration Areas in that year, and 20 states. For each of these cities and states the births were taken from 1918 Birth Statistics and the deaths under one year of age according to causes from Table II of the 1918 Mortality Statistics. From these data the rates per thousand living births for all class A and all class B diseases were separately calculated. The results are set forth in Tables II and III.

TABLE III—Showing the deaths under one year of age per 1,000 living births for (A) controllable, and (B) non-controlled causes of death in twenty registration states.

State	Births in 1918	Deaths under one year				
		A. From causes control- lable in some degree	A. Rate of con- trollable deaths	B. From causes not con- trolled	B. Rate of not con- trolled deaths	Rate per 1,000 births from all causes
Connecticut	36,971	1,755	47	1,723	47	107
Indiana	64,385	2,482	39	2,526	39	87
Kansas	39,117	1,163	30	1,522	39	80
Kentucky	62,338	2,325	37	2,328	37	93
Maine	16,798	870	40	743	44	101
Maryland	34,113	2,531	74	1,730	51	140
Massachusetts	95,640	5,284	55	4,324	45	113
Michigan	91,011	3,496	38	3,760	41	89
Minnesota	55,941	1,317	24	2,060	37	71
New Hampshire	9,642	451	47	499	52	113
New York	242,155	10,897	45	10,333	43	97
North Carolina	75,525	2,850	38	2,319	31	102
Ohio	124,586	5,029	40	5,296	42	94
Pennsylvania	220,170	14,596	66	10,295	47	129
Rhode Island	15,498	947	61	793	51	136
Utah	14,473	808	21	474	33	64
Vermont	7,507	253	34	343	46	93
Virginia	63,062	2,529	40	2,448	39	103
Washington	25,682	544	21	1,330	52	69
Wisconsin	60,867	1,854	30	2,334	38	79

In the last column of these tables the gross infant mortality rates from all causes of death have been inserted for comparison and to furnish the basis of certain discussions which will follow. It will be noted that the five boroughs of New York City have been treated as separate cities. This appears to be entirely justifiable, both on grounds of size, and of differentiation, any two of these boroughs being as much differentiated biologically and demographically as, for example, Minneapolis and St. Paul.

The first point which strikes one in examining Tables II and III is that in the group of causes of death subject to our classification (which includes in most cases, as will be seen, something over 90 per cent of all the mortality under one year of age) the controllable and uncontrolled causes are responsible for approximately an equal degree of mortality. In other words, it appears that if any degree of justification attaches to the classification here suggested, the infant mortality beyond present control by administrative measures is by no means a negligible fraction of the total infant mortality. On the contrary, it represents a substantial lower limit sensibly below which the health officer, no matter how zealous and intelligent his activities, may not hope to go at the present time.

If there is a substantial moiety of the existing infant mortality which is uncontrolled by administrative measures and is essentially unaffected by the present or past application of such measures, we should expect that the rate of mortality represented by this moiety would vary but little from city to city or state to state. As we have seen, the main reason why this part of the total infant mortality is beyond control is because it depends upon fundamental biological factors inherent in the parents and the infants. Clearly if this is so, whatever variation appears in this portion of the total infant mortality rate as we pass from community to community must arise from some combination of two factors; of which the first and less important is pure chance, that is, variation arising from random sampling purely; and of which the second is differing racial and other biological characteristics of the populations of the several communities. We should expect the variation in the death rate from the class B group of causes to show very little variation as compared either with the variation in the rate from class

A causes or in the gross infant mortality rate from all causes. This *a priori* expectation is beautifully realized in the actual statistics.

TABLE IV—Frequency distributions of variation in rates of mortality under one per thousand births for (A) controllable, and (B) non-controlled causes.

Rate	Cities			States		
	A Causes	B Causes	All Causes	A Causes	B Causes	All Causes
15-24	2	..	..	3	..	..
25-34	5	1	..	3	2	..
35-44	9	16	..	7	11	..
45-54	12	18	..	8	7	..
55-64	3	6	1	2	..	1
65-74	2	1	1	2	..	2
75-84	2	..	2	..	..	2
85-94	1	..	9	..	..	5
95-104 .....	..	..	7	..	..	4
105-114	1	..	5	..	..	3
115-124 .....	..	..	6	..	..	..
125-134 .....	..	..	..	..	..	2
135-144 .....	..	..	2	..	..	1
145-154 .....	..	..	2	..	..	..
155-164 .....	..	..	1	..	..	..
165-174 .....	..	..	..	..	..	..
175-184 .....	..	..	1	..	..	..
Totals	37	37	37	20	20	20

TABLE V.

Variation constants from the distributions of Table IV.

Group	Mean	Median	Standard deviation
Cities, A, controllable causes.....	49.46 \pm 2.04	47.08	18.37 \pm 1.44
Cities, B, non-controlled causes	47.30 \pm .90	46.15	8.09 \pm .63
Cities, all causes	107.84 \pm 2.75	102.86	24.78 \pm 1.94
States, A, controllable causes.....	42.00 \pm 2.17	40.71	14.41 \pm 1.54
States, B, non-controlled causes.....	42.50 \pm .83	42.27	5.52 \pm .59
States, all causes	97.00 \pm 3.03	95.00	20.07 \pm 2.14

It is seen that the class B causes of death, which are not practically capable at the present time of administrative control or amelioration, exhibit less than one-half as much variation in the rate of infant mortality for which they are responsible, as we pass from city to city or from state to state, as do the class A causes of death, which are capable of administrative control. This relation is true however the variation is measured. This is a novel result, of interest from several points of view.

In the first place, the suggestion lies near at hand that if the class A causes of death, which are controllable, show such great variation relatively as they do, it must mark an approximately equal variability in the zeal, intelligence, and efficiency of the administrative health officials of these communities. Anyone at all familiar with the organization of municipal and state health departments in this country will find it extremely interesting to study in detail the entries of Tables II and III noting how the class A (controllable) and the "all causes" rates fluctuate up and down, while the class B (non-controlled) rates stay, with a very few exceptions, so extremely constant. One will observe, with great satisfaction what splendid work is being done in some communities in holding down to a low level the infant death rate from controllable causes. Table II forms a real justification of the faith that is in the public health official of vision. It shows that the infant mortality from controllable causes *can* be kept down to a low level, and is in some communities. In the following cities (17 out of 37) the rate of infant mortality from the controllable causes of class A is actually *lower* than the rate from the non-controlled causes (class B).

New Haven
Washington
Worcester
Grand Rapids
Minneapolis
Albany
Bronx Borough
Queens Borough
Richmond Borough

Cincinnati
Columbus
Dayton
Toledo
Providence
Richmond
Seattle
Spokane

These cities stand as examples of the fact that a considerable portion of the infant mortality rate can be controlled.

Summary.

This paper is a first biometric survey of the infant mortality statistics of the recently established Birth Registration Area. It is to be regarded as preliminary to certain analytical studies of the problem of infant mortality now in progress in this laboratory. The chief results of the paper are first to set forth and discuss some of the constants of variation in infant mortality in the different demographic units. This variation, which is large in amount, markedly and consistently skew in the positive direction, defines

and throws into high relief the fundamental public health or administrative problem of infant mortality. Why do the communities having rates of infant mortality higher than the average occupy that position? Is it from causes capable of human control, or from causes beyond the possibility of such control? A special preliminary analysis of the data for cities of over 100,000, and the registration states indicates that causes of death capable of administrative control are chiefly responsible for the variation observed in the total infant mortality rate, while those causes of infant deaths which, for fundamental biological reasons, are not sensibly influenced or controlled by administrative measures, are a highly stable and constant factor from community to community, contributing little to the observed variability of the total infant mortality rate. In absolute terms, however, these causes of death not administratively controlled are responsible for roughly 40 per cent of the total infant mortality in the communities discussed.

REGISTRATION OF BIRTHS IN THE UNITED STATES

REPORT OF THE COMMITTEE ON VITAL AND SOCIAL STATISTICS

DR. WILLIAM H. DAVIS, *Chief Statistician for Vital Statistics, Bureau of the Census, Washington, D. C., Chairman*

DR. F. V. BETTLER, Baltimore, Md.

MR. FREDERICK S. CRUM, Newark, N. J.

DR. C. ST. CLAIR DRAKE, Springfield, Ill.

DR. WILLIAM H. GUILFOY, New York City

DR. RAYMOND PEARL, Baltimore, Md.

DR. ROBERT M. WOODBURY, Washington, D. C.

Registration of births in some parts of the United States dates back to Colonial days. No claim is made that all the births of the early period were recorded, but a very large part of them were, as evidenced by the old town record books, many of them still well preserved and carefully written. Our early ancestors in this country appreciated the importance of birth registration and every descendant today, who is interested in his family tree, reveres these old birth records which are so important to the genealogist. But, aside from the value that birth records bear in straightening out family pedigrees, a value not always appreciated by the uninterested, all must admit that such records are an absolute necessity for the proper functioning of our present civilization.

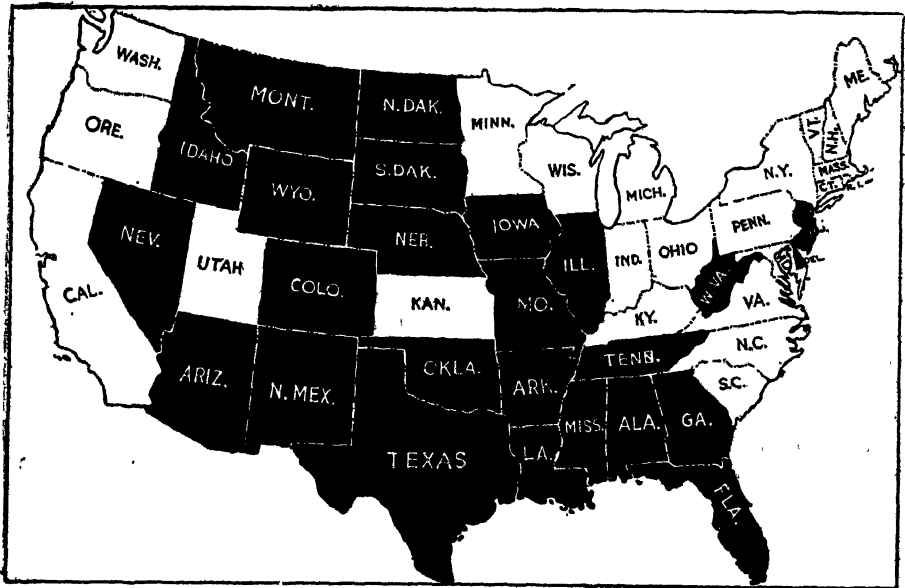
Birth records are needed to determine the age of the individual when he goes to school, when he goes to work, when he becomes a soldier, when he casts his first ballot, when he becomes a Representative or a Senator or President. Has she reached the age of consent? Is she old enough to handle her own property or must she have a guardian? These are a few of the questions which require birth records.

Forget for the moment these very personal reasons for birth registration and look at the whole question in a broader way. As a nation how are we developing generation after generation? Are the best strains of our population increasing or dying out? How are such questions to be answered intelligently and satisfactorily unless we have at our command statistical data based on accurate birth and death records. The infant mortality rate is one of the best measures of the healthfulness and intelligence of a community. In what sections then of our country, in what race stocks, and in what strata of our civilization are the infant mortality rates lowest? Where are they highest? How can we answer such questions and take steps to improve conditions unless we have the number of births and the number of infant deaths in all parts of our country? The need of good birth registration is so obvious that its lack of completeness at the present time constitutes a national disgrace. New inventions, new pleasures, and new demands

of all kinds upon the part of the individual have crowded to one side this fundamental of continual progress—birth registration. However, the prospect is brightening, state after state is getting into line, and the goal of good birth registration in the United States seems much nearer today than it did a few years ago.

In 1915 the Director of the Census established the registration area of the United States, an area of 10 states and the District of Columbia, in which the registration of births was believed to be 90 per cent complete. In 1916, Maryland was added; in 1917, Indiana, Kansas, Kentucky, North Carolina, Ohio, Utah, Virginia, Washington, and Wisconsin were added, and in 1919, California, Oregon, and South Carolina were added, so that now the birth registration area includes 23 states and the District of Columbia, and relates to 58.4 per cent of the population of the United States. Of the states outside of this area, only 5, West Virginia, Iowa, South Dakota, Nevada and Arizona, still have inadequate laws on their statute books. The principal trouble with the other 20 states is lack of sufficient state appropriations to enforce properly the laws. As proper birth and death registration depend upon the state and not the Federal Government, results must be sought by appeal to local pride. If every newspaper would carry in a conspicuous place on the front page the following words: WE REGISTER . . PER CENT OF OUR BIRTHS, the readers of these papers would wake up and in a short time every state would register 90 per cent of the births and be entitled to admission to the birth registration area.

The present birth registration area is shown in white in the following map:
(Reprinted from August Number of MOTHER AND CHILD.)



BIRTH REGISTRATION AREA, 1920.

ROUND TABLE CONFERENCES

(1) RURAL HEALTH PROBLEMS

COMMITTEE

Mrs. Ruth A. Dodd, Columbia, S. C., Chairman
Dr. Frances Sage Bradley, U. S. Children's Bureau, Washington,
D. C.
Dr. Roy K. Flannagan, Richmond, Va.
Mrs. Ethel Parsons, Austin, Texas
Dr. W. S. Rankin, Raleigh, N. C.

(2) DIVISIONS OF CHILD HYGIENE

Dr. Anna E. Rude, U. S. Children's Bureau, Washington, D. C.,
Chairman

(3) NURSING AND SOCIAL WORK

COMMITTEE

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RURAL HEALTH PROBLEMS

ROUND TABLE CONFERENCE

**Dr. James A. Hayne, Secretary State Board of Health, Columbia, S. C.,
presiding**

The Chairman: If you will pardon the Chairman making an opening address I will tell you some of the things that I think are the rights of the child. I know some of you will disagree with some of the things, but we have to have these in order that we may have the child here and so have child hygiene.

The Rights of the Child

The rights of the child named in the order of their sequence, and order of importance, may perhaps be thus arranged:

1. **The right to be conceived.** Strange as it may seem, this right has been more successfully denied to the child than perhaps any other of the rights. Malthus wrote and taught that in order for a country to be prosperous the number of babies must be in ratio to the amount of food produced. This, of course, implied birth regulation. Napoleon, on the other hand, when asked by Madame de Stael who was the greatest living woman of France, replied, to her chagrin, "Madame, she who has borne the most sons for France." Here we have the opposite poles of thought. In this country we have not lacked apostles for both creeds. Our own Roosevelt's slogan was more babies and better babies, and he fought the then growing tendency of the American family under modern conditions to consist of a human parasite, called a wife, and an idolized poodle dog. To the transcendentalist who believes that all souls are drawn from the Over Soul, and enter the material body but to perfect themselves by the trials and tribulations of this world and, after blind effort to reach the light, finally return to the Over Soul perfected by these struggles for higher things, the denial of the right to be conceived and born is to deny the whole scheme of the universe, is a sin against nature, and therefore unpardonable.

2. **The right to be born after conception.** Few will be found to advocate openly the converse of this proposition. But our birth registry, and the enormous number of miscarriages and abortions which occur will show that, in practice, many, far too many, deny the child this right. We medical men must be ever on the watch to prevent and expose these violations of the law of God and man.

3. **The right that its parents shall be healthy, both mentally and physically,** in order that the child shall not enter the race of life handicapped by transmitted disease or mental weakness.

The problem of eugenics, as first advocated by Galton in 1884, has had many followers. In 1904, Galton endowed a chair in the University of London for the purpose of the study of agencies under social control that may improve or impair racial qualities of future generations either physically or mentally. Galton's work has been elaborated, and laws have been passed in many states to endeavor to safeguard the child in this right.

By law in many states certificates of physical fitness for marriage have been required of both contracting parties. While we concede that this is a step in the right direction, much study is yet necessary before we pass arbitrary laws; for a physically perfect man and woman may never produce a Shakespeare, a Raphael or a Beethoven, and some of the greatest additions to human knowledge and happiness have come from those whose earthly shell was misshapen, for the body must always be regarded as the stringed instrument on which the soul plays wondrous chords, and this would be a dreary world, indeed, without poetry, music and art.

One of the best examples of the way in which eugenics has been carried out was recently given by the English nobility, in whom for centuries has been inoculated the idea that an English gentleman is the finest work of God. The answer came at Mons, where the flower of the English nobility laid down their lives gallantly fighting, with their faces to the foe, for the rights of democracy.

4. The right that its mother shall be so cared for by the state that neither through poverty nor ignorance shall she bring it into the world in unhygienic surroundings, nor under superintendence of those who are not properly trained to give the most skillful treatment to the mother in this, her time of supreme helplessness and agony. This means that maternity hospitals must be maintained in the city, and that in the rural districts trained medical men and skilled nurses must be easily available.

5. The right to have its mother's milk until it is old enough to be weaned. This we regard, perhaps, as the most important right, and the one most frequently denied. In the rich it is denied because some complaisant boudoir physician agrees with the mother who desires to be rid of the burden of nursing—that her milk does not suit the child, that she does not give sufficient quantity, that it will injure her figure, that it is best for the child not to nurse, and that it disfigures the tender mouth of the child and makes it misshapen. All of these arguments you and I have heard. In the poor it is denied because grinding poverty prevents the mother from giving the time necessary for nursing her little ones. The state should provide that no mother will have to labor so hard that she is unable to nurse her baby. Pensions for mothers are given in England before and after the birth of the child, and there is no expenditure of money a state can make that will pay better dividends than the care of the mother and babe. Old Jacobi, that Nestor of medical men, said after years of experience that a woman who could have a baby could in 90 per cent of the cases nurse it. But nature takes her revenge. In the rich she makes the mother strive by seeking new

pleasures every day and excitement of all varieties, to forget the pressure on her breast of little hands, and the dewey mouth of the babe which she has robbed of its birthright. In the poor, the mother, instead of having an infant every two years, has one every year; for normal conception does not take place before the child is weaned, and the poor do not understand all the arts of preventing conception known to the rich.

6. The right, guaranteed by the state, that every baby born shall have an equal chance with other babies to develop into the normal, healthy child. This is the problem of the health officer: that the child shall not have to suffer from the ill effects of communicable diseases; that measles, whooping cough and diphtheria shall no longer be called children's diseases; that the tender babe shall be cared for by all the power of the state, as it lives its happy life and grows in wisdom and stature. This also includes medical inspection and correction of defects.

7. The right that, when it reaches school age, it shall have the best that the resources of any government can command. It should have properly ventilated schools, carefully lighted and heated, with the most approved methods of sanitation; and if a proper diet cannot be provided in the homes of the poor, such diet should be provided in the schoolroom, so that its budding mind may be trained that it may attain to industrious, sober and healthy citizenship and take its place in the ranks of producers, and be a real asset to the government that has cared for it. This is the remedy for Bolshevism. These methods will stamp out the unrest of the world; and if the rights I have tried to indicate are given the child, the future of the race is assured.

The problems of rural child hygiene are many and how they have been met by some of the states is the cause for this Round Table discussion. I will ask Dr. Frances Sage Bradley, of the Children's Bureau, Washington, D. C., to start this discussion.

A Motorized Child Welfare Station

Dr. Frances Sage Bradley, U. S. Children's Bureau, Washington: I was asked to tell you this afternoon of the Child Welfare Special, a truck being used by the Children's Bureau as a means of reaching rural communities. The project was presented at last year's meeting of this Association in Asheville but after sixteen months' experience we feel in a better position to report on the relative advantages and disadvantages of a movable child welfare station.

Trucks have been used in various sections of the country for remedial purposes as dental clinics, clinics for diagnosis and treatment of tuberculosis, and the like, but this is probably the first one to be used solely for educational purposes.

Among the advantages of this experiment should be mentioned: First, the novelty and rather dramatic effect of the big Special as it rolls into a rural community, gathering a crowd from the outskirts of the town until it

swings into the Court House square or yard of the school or church where it is to be parked. Natural curiosity must be satisfied. Is it a hearse, an ambulance or a Gipsy wagon? Upon occasion it has even been besieged for sandwiches.

Men and boys dive immediately into the depths of its mysterious mechanism; while women and girls are equally fascinated by its immaculate white enameled interior and the compact and unique arrangement of its contents.

Second, for clinical purposes its equipment is more complete and up to date than could be found in the average small town, or indeed in many a large city. It is heated and lighted by electricity, has an ample supply of running water from a fifteen gallon tank placed over the chauffeur's seat, and piped to a convenient basin. It has storage room for an exhibit consisting of films, stereopticon slides and projection machine; and for panels, posters and models. There are drawers for sheets and smocks, cabinets for literature from various government departments as well as from the State Board of Health of the State visited; and filing cases for schedules, case cards, etc. There is also an examination table, with accurate weighing and measuring apparatus.

Outside are stored a tent with cots and blankets for three, and a supply of dishes, cooking utensils, and canned goods, thus insuring the well-being of the staff, in the absence of hotels, and relieving them from becoming an imposition upon the hospitality of the neighborhood.

Among the disadvantages of the truck must be mentioned its unavoidable bulk and unwieldiness, especially when pulling through heavy sand, or for steep mountain climbing. The matter of roads, however, is being steadily solved by local action, and the building of a second truck like the building of a second house would be subject to certain changes after sixteen months' experience. Doubtless a number of improvements might be made.

The results of this experiment have been a greatly aroused interest in the localities visited; farmers, appreciating the practical value of upbuilding the quality of their stock, apply the same principles to improving the condition of their children. Women also are eager to learn better ways of rearing children, and of avoiding the many ills heretofore accepted as inevitable. Children were brought to the Special by fathers, mothers, teachers, physicians; and in some cases it must be admitted that grown-ups were brought by children. The curiosity of the latter got the better of their shyness and, in fact, the interior of the Special proved less formidable than the instrument cabinet and sterilizing apparatus found in the local doctor's office, which was kindly loaned in a particularly inaccessible town which could not be reached by the Special. A few words of explanation soon win the confidence of practically every child and its interest in the examination is inevitable.

The enthusiasm of teachers leads to overwhelming requests for examining and grading of school children instead of pre-school children for whom the Special was intended.

The cordial cooperation of physicians has been universal. They have generously made laboratory tests, X-rays, assisted in placing special cases, and are most active in doing remedial work, medical, surgical and dental.

The cooperation of lay organizations is always assured, leading in many counties to the installation of public health nurses; in one county visited, to the establishment of noon lunches in many of the county schools; to furnishing additional milk for every child found 10 per cent below normal weight for his height. The Special has had the satisfaction of seeing excellent scales installed in every school of the largest town of one county and in several of the county schools; of seeing height and weight charts hung upon the wall of every school room in the county, and "height and weight" added to the regular monthly report card of every child in the town and county.

The Special has aided in the establishment of milk stations, baby clinics, and in fact of any local activity needing encouragement.

It is probable that a sufficient interest has been aroused in the last county visited to result in the establishment of a Child Welfare Center in connection with the model Health Unit being developed jointly by the Public Health Service, the International Health Board, and the State and County Boards of Health.

The experience of the past sixteen months would indicate that an impetus can be given to promote welfare work more promptly, more thoroughly and effectually by means of this rather dramatic motorized activity than would be possible by more conventional methods; and the expense can be measured only by the value of the results accomplished.

A recent leaflet issued by the Children's Bureau gives details as to expense, etc., and while the method is not urged for city work nor yet for work in remote mountain districts yet it is believed that states would find it a wise and worth while medium for reaching their rural populations separated as they are by vast stretches of territory, yet segregated into small towns and communities whose name is legion.

The Chairman: I am sure we have all been interested in Dr. Bradley's description of what can be done. In South Carolina we have a truck which has a Delco lighting system on it and with it we go to district schools and give a moving picture exhibition. We have a typhoid reel, a tuberculosis one, and various other reels.

If anyone would like to ask any questions in regard to Dr. Bradley's work I am sure she will gladly answer them.

Dr. Mary E. Brydon, Director, Bureau of Child Welfare, State Board of Health, Richmond, Va.: I have several questions I should like to ask. Next spring we in Virginia are planning to put on a child welfare drive for pre-school children, and we have been wondering what is the best way to carry that on. I have decided that the best way is the truck. I should like to ask where we can get a truck and what they cost. I think that would be one of the easiest means of going to the rural districts judging by what Dr.

Bradley tells about the truck. We are planning to spend a week in each county that wants us, beginning as early in the year as the roads will permit. I also would like to ask if Dr. Bradley thinks a week is long enough to stay in the ordinary sized rural county.

Then, bringing out what one of the papers said this morning, that something must be left with these people that we go to, what does Dr. Bradley leave in the way of instruction for the parent besides what she gives when she talks to them? Recently there was a tuberculosis conference held in Richmond and I saw what I thought was very good—a certificate of health that was being given to children who had had their defects corrected. I thought that a good plan and wondered what Dr. Bradley leaves with the mothers.

Dr. Bradley (replying to Dr. Brydon): I feel sure that trucks can be built in many large cities. The one we are using was built by the Fred Meckel Company, body builders, Chicago, Illinois, upon a chassis purchased from the General Motor Truck Company of the same city. The initial cost was \$5,000 to which must be added a few hundred dollars spent for later improvements.

Replying to the question concerning literature given the mothers of children examined, we give what seems appropriate and helpful in each case. It was intended to limit the work of the Special to children of pre-school age, and to the mothers of such children we give leaflets and bulletins on Prenatal Care, Infant Care, Care of the Young Child, Milk the Indispensable Food, etc., copies of which may be obtained from the U. S. Children's Bureau, Washington, D. C. We also give the mother a small folder, listing on one page the defects of her child as shown by a thorough examination in the Special; and on the opposite page we give her written suggestions for the correction of these defects, whether by improved hygiene for which she alone is responsible, or by the help of her physician whom she is urged to seek. We feel that carefully written personal recommendations for a woman's own child are more highly valued than printed instructions, and they are treasured often for later discussion with the father, or with mothers of neighboring children.

We use also a more intensive medical record, securing information concerning the nationality and occupation of parents, past history of child, including previous illnesses, and present condition. This record is sent to Washington for statistical purposes.

In spite of ourselves we have been drawn into school work by the urgent request of teachers to examine pupils suspected as defective, or to aid in classifying and grading difficult cases. For school work we have been using in Kentucky the very excellent medical examination card issued by the United States Public Health Service. These cards have four parallel columns, one to be filled out each succeeding year for four years, and space for recording the neglect or the correction of defects with the resultant effect on the condition of the child. These cards are filed with the County Health Unit, which mails reports to parents with recommendations for correction.

After a few days these reports are followed up by personal visits of the public health nurse, who has secured excellent cooperation from both parents and physicians.

Perhaps most of you have seen photographs of the Special. I will pass around one of the exterior and one showing the waiting room in a small town where mothers are awaiting the examination of their children. You will see an exhibit of miniature models showing good ways to bathe, clothe and feed young children. Another picture shows the nurse testing hearing and vision. This is often possible with a child of five or six, using a watch or the whispered voice for the former and Snellin's chart for the latter. This chart shows the capital letter E in various sizes and locations, and while it is explained to the mother that neither test is exhaustive or conclusive, yet the child failing to respond to these tests in a normal manner undoubtedly needs the care of a specialist.

Some one asked how they might secure the Special. It is obviously impossible for one Special to respond to requests from all over the country. The Children's Bureau is glad, however, to consider propositions from State Boards of Health or similar organizations where definite cooperation promises permanent results.

It is hoped that states may see their way to trying the movable child welfare station as a means of stimulating local interest in the establishment of permanent centers. While this truck has been in service but sixteen months and is probably subject to certain changes, it is doubtful if, for the same amount of money, more conventional methods would have yielded as prompt, as widespread, or as permanent results as have followed the Child Welfare Special.

The Chairman: I will now ask Mrs. Ethel Parsons to tell us something about the problems she has had to contend with in her work in Texas.

Rural Child Health Centers

Mrs. Ethel Parsons, Director of Bureau of Child Hygiene and Public Health Nursing, State Department of Health, Austin, Texas: I do not feel that we have been working long enough to give me a chance to solve many of our problems. We are still struggling and we have had a hard time. Our Bureau was established one year ago. At that time we had in the state one public health nurse doing rural public health nursing. Now we have sixty in fifty-six counties. I will tell you quite frankly that my own ideas concerning what a child health center should be were extremely vague—there were so many different definitions. Dr. Peterson says that "where two or three are gathered together in the name of health that is a health center." Another person says that "a health center is for the dissemination of health information."

But I have felt that we had to give our Texas people a more tangible benefit, something that they could take hold of and take home with them. I was delighted to hear Dr. Curtis say this morning that a health center must have something definite and tangible to give to the people. In organizing

our centers, first the nurses go out into the counties and get acquainted with the people and the members of their own committees. Then we arrange with the University of Texas to go in and hold a Child Health Conference. That institution has held such conferences for many years, but they have felt right along that if a conference is held once a year and no follow-up work before another year had elapsed, maximum good was not accomplished. They were glad to cooperate with us, go in and hold the conferences and leave our nurses to keep up the contacts. The plan works well. It gives the nurses an acquaintance with the community and an entrée into the families, and contact with subnormal children.

At the time of the child health conference we show health films, such as "Our Children," and "An Equal Chance."

The greatest difficulty in establishing Child Health Centers, is to secure rooms. Many times nurses have had to use the county rest rooms or the Red Cross work rooms. We have had all sorts of makeshifts. In one city of six thousand the city officials told us they would give us a house that belonged to them if we would let them use it as a polling place on election day. We felt that this might be good publicity and so it is being used.

I do not think that in any community we are strictly and solely a health center. In every rural community we have included some clinic features and other form of health work. We have asked the local doctors to assist at the health conferences and the County Medical Society to appoint the medical staff to serve at the Center. The doctors were exceedingly interested and cooperative, but in many instances felt that they were not informed on new methods of infant feeding, and have hesitated to give their services on that account.

Also we have sent out a traveling dental clinic, particularly to the counties where the nurses had been doing inspection of school children. In many places there was only one dentist in the county and he could not possibly take care of all the cases. We employed one dentist, used the folding dental chair that is used in the Army Service Camps. He has done a tremendous amount of good. We were forced to limit the work to three months because of shortage of funds.

We also encouraged adenoid and tonsil parties. Where the nurses could make arrangements for from ten to twenty children a specialist went out from the nearest large town for one day.

The distribution of literature we, of course, carry on. I am not yet ready to say that our system is the right one, but we are getting very good results, so far.

The Chairman: I am sure that Miss Gibbes of the Southern Division of the Red Cross, has some interesting things to tell us about her work in North and South Carolina, Tennessee, Georgia, and Florida.

Cooperation With County Officials

Miss Virginia Gibbes, Southern Division of the Red Cross, Atlanta:

Mr. Chairman: It is difficult to know which problem to approach first, but

the question of cooperation with county physicians is one I have been most interested in and anxious to see what measures would get the best results. Then, too, the bringing of health officials and school officials together. In the Southern Division three-fourths of the time the nurse is working in the school and no school money is being spent, although the school inspection is theoretically the obligation of the school. In one county in Tennessee an excellent piece of work has been accomplished. One of the nurses organized a committee on the inspection of the county school children, that is composed of the local school superintendent, the county school superintendent, the local part-time health officer and the county part-time health officer and county oral hygienist. The county oral hygienist has interested the local dentists, secures equipment and makes sure that a dentist will be able to go out to a school on a certain day. The part-time health officer's job is to interest the local physicians and notify them of their visit to the county school. The nurse has gotten out a letter in which she states that this committee has met and a certain school will be visited at a given time. The special job of the county superintendent is to make out the itinerary for visiting the county schools, gradually working into the county seat for the winter time. Whenever a school is to be inspected the nearest physician is notified, stating that they will visit the school in his neighborhood on a certain day, that they will be glad to have him present to see what is going on, and hope for his cooperation in the future. At the same time a form is sent to the school teacher who sends one home to each family, stating that the committee is to be there and inviting them to come. That is the best plan that I know of.

The thing that has struck me in visiting the county nurses is the fact that no definite, regular, attractive report is available to be submitted to the school principal and superintendent, and often the case is that the school authorities take the attitude that they are doing the health people a great favor by permitting them to go in and examine the children. The school report generally used reports county school examinations in bulk. I think if we could work out some plan for reporting each school as a unit including a summary of physical examinations and sanitary inspection and send that report to the county superintendent, to the local principal and perhaps to the Parent Teachers' Association, if one exists, it would be a better means of bringing the work to the attention of the school people.

Chairman: I will now request Miss Ehrenfeld to tell us briefly something of her experiences in her work in North Carolina.

Organization of Division of Infant Hygiene and Public Health Nursing

Miss Rose Ehrenfeld, Director of Division of Infant Hygiene and Public Health Nursing, North Carolina State Board of Health: I believe I was requested to discuss for a few minutes how a director of public health nurses can correlate the work of her department with the other departments of a state board of health.

Public health nursing is essentially educational and fundamental to the child welfare program and as every department of a state board has a direct or indirect relation to child welfare they have a certain interdependence upon each other. The bureau of child hygiene in most states is the most recently developed one and admits of the director supplementing the work of the other bureaus. Depending entirely upon the organization of the board of health and the character of work already undertaken, this particular bureau can relate its work to the others.

Our bureau is contributing to the tuberculosis program by furnishing a bureau representative as a supervising nurse for the rural tuberculosis diagnostic clinics throughout the state. Such a representative together with a diagnostician from the State Sanatorium and the county public health nurse make the clinic personnel and this standardizes the rural work. We have had eleven such clinics and have appointments for seven more.

The county public health nurses placed by our bureau are furthering the work of the Bureau of Medical Inspection of Schools by teaching the teachers how to make physical examinations of pupils which is required of them by law. The U. S. P. H. S. school card is used—the reverse of which is intended for a thorough medical examination (by a physician) of any child whose defects recorded by the teacher on the front of the card indicate the need of same.

The county nurses are also introducing into as many rural schools as possible the Modern Health Crusade. (Our Bureau of Medical Inspection of Schools employs dentists who are holding free dental clinics for school children throughout the state. They have also a staff of surgeons and nurses for "tonsil and adenoid clinic" work among the school children, which operations are performed at a very small expense. The dental clinics are practical and their educational value possibly greater than the corrective work done.) The county nurse cooperates with the clinic work and uses her car in bringing in the children.

The Bureau of County Health Work has as its director a representative of the U. S. Public Health Service detailed for the work of developing full time county health departments. The county health officers are placed by this bureau and the county public health nurse supplied by the Bureau of Public Health Nursing and Infant Hygiene. Where there is a full time department and health officer the nurse is detailed to the health department and works under his direction, sending a monthly report to the Bureau of Public Health Nursing, while the health officer's report is sent by him to the Bureau of County Health Work.

The midwife is the connecting link between our bureau and the Bureau of Epidemiology. It happens that the midwives are required to register with the Bureau of Epidemiology and we are having the county nurses give a course of instruction to them. As there are only twenty-five county nurses the Bureau of Epidemiology will send to the midwives in the other seventy-five counties notices of dates and places of meeting, where a representative of our bureau will teach them how to comply with the law regarding their

practice. The instruction given acquaints them with the fact that they must register with the State Board of Health, must file birth certificates and must use silver nitrate in the newborn baby's eyes. If able to read, they are taught how to fill out birth certificates and are taught by demonstration the use of silver nitrate, also principles of personal hygiene. Following a demonstration in the puncturing of the silver nitrate ampule, expressing its contents, etc., there came a request to the Board of Health from a midwife heretofore unknown, in which she asked for "some more of them jugs of eye drip." The best results are obtained by instruction accompanied with demonstration and we feel sure that this particular midwife understood the message and would comply with that part of the law at least.

I consider it highly desirable that a director of a joint bureau of public health nursing and infant hygiene make of the public health nurses a contributing factor in furthering the work of the other departments in addition to any new development undertaken by her bureau, as the work of all departments have a direct bearing on the child welfare problem.

Mrs. Parsons: I would like to ask Miss Ehrenfeld how she ferrets out these midwives. We have a law requiring registration, but there is no penalty for not complying with it, and I have only fifteen registered.

Miss Ehrenfeld (replying to Mrs. Parsons): The midwives are all supposed to register their names and addresses with the State Board of Health. We have 4,000 registered and have reason to believe there are half that many more within the state. One of the nurses found seven or eight in one county seat not registered. If you can get three or four together for a conference they will bring others who will put you in touch with more.

The Chairman: We took a list of the midwives that had filed birth certificates and in that way we got three thousand.

To those who do not live in the South and do not know the conditions there we may be discussing things they will not understand. There is no such thing as a midwife in the South. They are ignorant grannies, the most ignorant women in the community. We do not mean any intelligent person who takes up the business of helping in obstetrics, for we are not discussing midwives of New York City. These women are usually the most ignorant of the colored people, but if there is a more ignorant white woman they have her.

Possibilities of State and County Fairs

Dr. Florence B. Sherbon, Director, Division of Child Hygiene, State Board of Health, Topeka, Kansas: I wonder if the public health nurses appreciate the value of the County Fair as a place which offers a really valuable opportunity for educational work? The children's health conference at the County Fair gets a strictly rural audience and the work is of distinct value. The supervisor of public health nurses in Kansas told me that her nurses this fall have examined more than six thousand children at the County Fairs, and stories are coming into my office constantly from follow-up work which results from these conferences at the County Fairs. It is a

simple matter to hold these conferences and there should never be a County Fair held without one. The farm people in these days are becoming quite as interested in human stock as in their agricultural assets.

I want to go back to Dr. Bradley's description of the "Special" and add my word of commendation of this type of ambulatory educational procedure. We have in Kansas a Pullman Health Exhibit. Five years ago a discarded observation car was given to the State Board of Health. A small appropriation was made with which this was equipped as a health exhibit. It has been pretty constantly on the road ever since, manned sometimes by a nurse, and social worker, sometimes by two nurses, or a physician and a nurse, according to circumstances. The plan is to map out an itinerary. The car stops for a week or ten days at each place and the forenoons are given to the school children. By prearrangement the children from each school room are brought to the car in charge of their respective teachers. The children are weighed and shown the exhibit and when they go back the teacher is asked to have them write up their visit and they are requested to bring their letters to the car. In that way we are able to check up what the children get from it. The afternoons are given to mothers and children and to the general public. While this is bread cast on the water and the results are intangible and difficult to measure, yet I get the impression from communities in which the car has visited that considerable definite follow-up work has resulted from the stimulus of this visit. A good many school and county nurses have been employed as a result of the visit of the car. I am very anxious to get a truck for the western part of the state, where we have wide stretches of territory which are inaccessible to the railroad, and where nurses and doctors are very inadequately distributed.

Dr. Brydon: I do not agree with Dr. Sherbon that child welfare conferences at a fair are a success. I do not know what kind of fairs she has, but in the South they are the worst place in the world for child welfare conferences to be held. In Virginia we have a great deal of dust. Babies should not be brought to the fair. We have crowds; babies should not be allowed in crowds. I do not know what kind of a fair you have, but if you have to examine a child under the grandstand, for instance, with a band playing—you cannot examine the heart or lungs under these conditions, and where there is no light you cannot see the condition of a child's eyes. One other disadvantage is that many mothers are far more interested in seeing the side shows and double-headed cows than they are in having the children examined, so I am discouraging everywhere in Virginia child welfare conferences at county fairs, and suggest that in the spring, conferences for children should be put on in the county for a week, where the mothers have nothing to distract their attention from keeping the well babies well.

Dr. Sherbon: I agree that children should not be brought into the dust and into the crowds, *but the children are in the dust and in the crowds*, and we might as well take advantage of the circumstances. The whole family must attend the fair if any attend it. These children are there and we might as

well try to teach the mothers a little something about the care of the children. I wish to say that I did not in my former remarks develop my whole idea because of the pressure of time, but I will say that at one of the Kansas State Fairs we have made a start toward making the fair more safe for children by establishing a playground where the children can be checked and left while the parents are visiting the exhibits, and also by the establishment of a day nursery where there is pasteurized milk, and where the children can get the proper care. Since the children are there anyway, we can at least make them as safe as possible. All that is being done little by little in the County Fairs as well. I know various County Fairs plan next year to have rest rooms, and quarters for women and children, and in some states and counties examination quarters have been built into the fair equipment, and the authorities have come to provide for the welfare of the human stock as well as for the live stock.

Dr. Lydia DeVilbiss, U. S. Public Health Service, Washington: We found this summer that the fair officials were getting ready to put on a contest and were going to do it anyway and we could not discourage them without offering something else. We have asked them to give us a booth and equip it with a pair of scales with height and weight rate; that a nurse be in attendance and a nutrition worker and physician. We want all the assistants we can get. As the mothers bring in their babies they are simply weighed. We do not recommend a complete examination of any babies at the County Fair, just their weight and height. If a physician who is accustomed to handling children is present he is asked to give the chest the "once-over." If anything in particular is found we ask them to take the child to their own doctor. They are given a little score card on which the nurse can write up such instructions as she deems necessary and then the mother is asked to take the children to their regular physician. A most valuable feature of the work is that it gets us in personal contact with the mothers. It also stimulates the desire in a community for a full-time nutrition worker. Before taking up public health work I was editor of the Children's Department of the "Ladies' Home Companion," and hope I may be forgiven for some of the baby contests. In helping to put over these contests at the fairs I am trying to atone for the others.

Dr. Elizabeth M. Gardiner, Director, Division of Child Welfare, State Board of Health, Providence, R. I.: I think it is worth while to go to the County Fairs. This year we had something of the sort that Dr. Sherbon has just described; that is, a checking place where the children could be left, and not only did they give us a large space for this purpose, but they screened it and put up awnings at the windows, and next year they propose to double the space, so that we will have two good, large rooms. I think if officials of the fairs, are made to understand that it is the beginning of a permanent feature, they will not only do what we wish them to do, but will also pay for it.

Dr. Sherbon: This year at the Kansas Free Fair we made the whole family come along with their babies, and we examined them, putting each individual through a three-hour searching examination, including psychological, mental, structural, physical and laboratory tests. Every father and mother had a Wassermann test. Twenty-five families were examined and many more applied than could be accommodated.

Mrs. Estelle N. Matthews, Colorado: We have no Child Hygiene Division in my state, and no medical supervision in the state, but through the County Fairs we have worked continuously and find it of great help. Now they are providing places at the State Fair and at the County Fairs, and without them we could never have done the work which we have been able to accomplish.

The Chairman: I think we have assumed that we have gotten the child to school age. We have to do something about the care of the mother and the baby until it is six months old, and then take care of it until it gets to school. After it gets to the school we know it will be taken care of. I will ask Dr. Clark to tell us something about rural hygiene for the pre-school age.

Health Education in Rural Communities

Dr. Taliaferro Clark, U. S. Public Health Service, Washington: Probably one of the most difficult problems that confronts all of us is what are we to do for the child of pre-school age in rural districts. In the first place, we have rural districts and rural districts. What is applicable to the children of one district is not at all applicable to the children of another.

In a recent report of a survey of rural homes by the Department of Agriculture in thirty-three states of the North and Northwest, it was stated that the average number of children per family under 10 years of age was 1.18 and of children over 10 years of age was .89, and yet we are accustomed to think of the rural family as having a large number of children. If the survey is an actual index of the number of children that may be found in rural districts there is evidently lack of prenatal care, obstetrical and lying-in facilities and sound medical advice on the care of infants in the district represented by these states. My own work has been largely in very rural districts where it has been observed that in many instances the rural child grows just like Topsy—just grows, that is if it lives to grow. How are these conditions to be corrected? Personally, I feel that it is largely a matter of education. The people of remote rural districts have not the educational opportunities of the dwellers of cities and much of their health information is a mere matter of superstition or tradition. I am inclined to think before any concrete health work can be fruitful of results it will be necessary to educate the parents and awaken them to a sense of responsibility and duty to conserve the health of their children. The average individual in a rural community thinks it is folly to spend money to have an apparently well child examined by a physician and to secure advice on how to keep him a

well child. He is accustomed to consult the family physician only in case of grave sickness.

The health center is all right in districts where the population is sufficiently dense to warrant and support them, but there are great stretches of country where there are no physicians. Only yesterday I read of a woman giving birth to a child, the nearest physician being seventy-five miles away. What are we going to do? I believe the greatest single good for such communities would be to secure for them a well qualified all around practicing physician. I believe the thing we should insist upon is to make it worth while for well qualified physicians to locate in rural districts. If the population is not wealthy enough to support a physician, then it is the duty of the state to subsidize a physician and place him in such a community with proper remuneration.

The Chairman: I think that Dr. Clark has struck the keynote. I have given the matter a great deal of study. Something had to be done about it. The medical profession has put the standards up to such heights that in order to get a return for his money spent in getting his M. D. degree a man has to go to the city to practice. He cannot make a living in the rural districts. Moreover people will not live in the country because it means having no pleasure. We want to put them back in the country and the only way to do this is to make them know that they will have health in the country and will be taken care of in case of illness. They do not want to bring up a family where they cannot have medical attention. I believe we are beginning to put the standards too high for the doctors, are going to have a great shortage of doctors and nurses through the country.

Rural Clinics in Minnesota

Dr. J. P. Sedgwick, Minneapolis: If you will look at our display downstairs, which I will ask you to do, you will see what we are doing in Minnesota in the way of rural clinics, pediatric clinics, dental clinics, and nose and throat clinics. The work was begun by Dr. Huenekens of our staff. He started a rural clinic and we saw the advantage of what he was doing. He was then made the chief of the Bureau of Pediatrics, or Child Welfare, of the State Board of Health. Unfortunately, for political reasons, the necessary amount of money was not given to continue the work of the Bureau. Then we turned to other sources, notably the Minnesota Public Health Association, which had been in charge of the Christmas sale of stamps and had money on hand. They furnished the money for the physician, \$25 a day, and the nurse.

We have given one hundred of these clinics all over the state. The work is carried on by different people; the administration by the Minnesota Public Health Association; the nurse is now furnished by the Red Cross, and sent out with the doctors, and the medical work is done by the Northwestern Pediatric Society, most of whose members are on the staff of the University.

We make a great effort to get the local physicians to take part in these clinics, and we are succeeding in bringing them out. Our success is largely due to Dr. Huenekens, who was president of the Society, and Dr. Pearce, who was secretary. The work is almost entirely rural and through it we hope to reduce the infant mortality in Minnesota, although it is already one of the lowest in the country. In all of the clinics opportunity has been taken to emphasize our breast feeding propaganda. In some districts we find breast feeding in very high proportion, and in others, due unfortunately, to some physicians or to the ignorance of some of the mothers, many of the babies are artificially fed. These babies as a rule are rickety and so we keep on urging breast feeding. We have not as low a rate now as Seattle, but they have not the summer diarrheas that we have. We can control these summer diarrheas by mothers' milk and practically every mother can feed the baby from the breast, as we have shown that 76 per cent of the mothers in Minneapolis are feeding the babies at the breast. This should be universally done.

We want to continue this work next year, and I am trying now to raise the necessary funds. The cost of the clinics is \$7,000 a year—and it seems pitiful that we have difficulty in raising as small a sum, in a state like Minnesota, for work that is as important to the state as this.

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DIVISIONS OF CHILD HYGIENE

ROUND TABLE CONFERENCE

Dr. Anna E. Rude, Director of Hygiene, the Children's Bureau, Washington, presiding.

The Chairman: In planning for this meeting someone suggested that organization charts for city and state divisions might be of interest. On the right you will find such charts for State Divisions, and on the left for Municipal Divisions. In the organization of all child hygiene divisions there are certain general underlying principles. Dr. S. Josephine Baker, Director of the first child hygiene division in this country, will talk to us on this subject from the standpoint of a practical administrator.

Dr. S. Josephine Baker, Director, Bureau of Child Hygiene, Department of Health, New York City: I am doubtful as to just what ideas would be helpful in the problems which face you. Possibly the first thing would be to give you some idea of the fundamental problems in organization as they appear to me. Our problems vary greatly. The state boards of health are supervisory and advisory in their functions while the city and town boards of health or child hygiene divisions are administrative or executive, and we have to go out into the field and do the work, and rural child hygiene work is mainly a matter of methods, for it is so individual. It is difficult for one doctor or one nurse to organize him or herself. Our first question is the best form of organization in the State and in the cities. There is always a question in the minds of most of us when we start to organize child hygiene work as to which method we will use. Will you have a functional organization, corresponding to the type of work you wish to do, or will you organize by considering the territory you have to cover.

I will try to explain the two types more clearly. The functional type implies a number of divisions in the bureau, each one concerned with a special line of child hygiene work. Such a bureau might have a division of baby care, a division of midwife supervision, one of the child of pre-school age, one of school health supervision and one covering the issuance of employment certificates. The head of each of these divisions would be an administrative officer or chief, in full charge of the actual work of that division. He is not only the chief officer, but the executive or administrator of that branch of the work. In many large cities that type of organization has been carried out successfully.

The other type of organization is that in which you have an expert in each line of the work, who acts in an advisory capacity and sends out suggestions to communities as to the type of work that seems most suitable.

The local communities actually do the work. This means that counties or rural communities can get information as to the best methods to be employed and do not need technical experts of their own. The first mentioned form of organization is best suited to cities. The second is that usually employed by State bureaus or divisions of child hygiene.

Fundamental Types of Organization

These are the two fundamental types of organization. They admit of variations but basically all follow in some degree one or the other type. To outline a definite form of organization that applies to all States and cities is practically impossible, but there are certain points that are common everywhere as a basis for effective work. The first thing that is necessary before you organize any sort of bureau of child hygiene is to know some of the facts about the community in which you are going to work. You must know the morbidity and the mortality rates—not only where the children die and why but where and how many are born. A careful survey of the locality is essential. You must know the kind of people with whom you have to work. Race has an enormous influence on sickness and death rates. You must know the social and economic conditions in your community and, in order to play your part you must know a good deal about the distribution of the people in your territory. The problem in the sparsely settled community is vastly different from the one in the thickly-populated city. You must know where and how the children live and when and why they die. After you are fully informed as to the conditions you must combat, I think the next thing is to stimulate public opinion so that your task will not be too hard. After you have stimulated public opinion, your organization is, I believe, in every place a matter of evolution. I think that a practical point in organizing child welfare work in any community is to remember that the first point of attack is the reduction of infant mortality. Babies have the greatest popular appeal and funds and interest are more readily available for saving babies than for any other form of health work. I do not think the baby's life is more valuable than the child's life, but many people do, and baby work will get you started more quickly than anything else.

A well organized Bureau of Child Hygiene cannot be built up at once. Functions may be added from time to time, as the need is evident, and the goal should be an organization which will include

- (1) Prenatal care and provision for proper maternity service, including control of midwives
- (2) Reduction of infant mortality
- (3) Health supervision of children of preschool age
- (4) Health supervision of children in schools, including school hygiene, teaching health to children and the maintenance of necessary clinical facilities
- (5) Control of conditions affecting adolescent boys and girls, with particular reference to the issuance of employment certificates.

The Chairman: I will now call on Dr. Hartley, Director of the Division of Child Hygiene of the Bureau of Health of Philadelphia.

Dr. Harriet L. Hartley, Chief, Division of Child Hygiene, Bureau of Health, Philadelphia: I do not know that I have anything new to state, but last year's experiences have brought out some things that may be of interest. In Philadelphia we started the work differently from the way in which it was started in New York; in the first few years all the work was done in the mothers' homes. We now have nine baby health stations, and later this fall we expect to open two more. The work in these centers is entirely educational; it has seemed rather slow and uphill at times, and the doubt has come as to whether it would not be better to dispense milk as a stimulant to the work; but that time is now past and we know that the milk station is not practicable in Philadelphia.

Our city pays very poor salaries to its nurses, and during the past year we have had to carry on the work with only two-thirds of our usual force. Many health organizations have become active in the city lately, and they seem to be endowed with so much wealth that they are able to entice the nurses connected with the Division of Child Hygiene away for salaries almost twice as large as those we can offer.

This shortage of nurses has proved, though, that the work is founded on the right principles. In previous years our work was largely in the home, and we had very few centers; but the women have learned to seek advice if it does not come to them, and while we have not been able to make as many visits in the homes we have instructed just as many women in the care of the baby as in previous years. The prenatal work, however, has suffered considerably, because it is absolutely impossible to do this work extensively without a good corps of nurses to go into the homes and follow up the expectant mothers.

Dr. Theresa Bannan, Director, Bureau of Child Hygiene, Syracuse: If you were seeking an anti-climax you would ask Dr. Baker about New York and then ask me about Syracuse. We have been in existence about six months as a Bureau of Child Hygiene. Until the first of January the Department of Health was in the possession of the Department of Public Safety. Therefore, the doctor had nothing to do with it or say about it. The new commissioner who took office the first of January, a real, red-blooded, high-degree Mason, up-to-date in every particular and determined to give us a real, red-blooded administration, has left the direction of the Bureau of Child Hygiene to me, and, therefore, it has gone slowly. When he gets through chasing up farms and cows and milk and discarding bobbed veal and doing other things that go with a red-blooded administration, he will turn his attention to child hygiene and we will begin to move. The first thing I did when I knew this was coming was to send out a S. O. S. to Dr. Baker, saying, "Please send us something about child hygiene, for we do not know anything about it."

I did not have any qualifications or know anything about the admin-

istration of child hygiene stations, as I said, but today I believe, with Dr. Sedgwick, that the whole foundation of the mother's health depends upon her first baby. We started infant welfare stations; one of them is now two years old. It is in a well equipped school, the children have private nurses and their own physicians and all that, and are well kept and well fed. We have other welfare stations which are one and a half years old. When the smoke of battle cleared away the first of January and the new commissioner took over the reins of government, he did not know much more about it than the rest of us did. I had been connected with the department for several years in the infantile paralysis work and the "flu" epidemic. We then started to work on the "flu." We had one nurse and she didn't know whether she belonged to the Child Welfare or the Department of Health, so she played both sides. She went out into the "flu" epidemic and she did the work, just as every other nurse had to. If any epidemic breaks out, the nurse must go. And the first of April—a typical day—we all took a start, like all other places, to take over from the local organization, three welfare centers. Two were working fairly well, the third was in the Polish district and was not very large. That had been in operation for two months, with very little success. So it seemed the thing to do was to send the nurse into that district. In the meantime we had acquired two more nurses. The nurse then went into the district and found 320 babies under two, and 600 under five—a prolific part of the city. That took the greatest part of the month and then we opened another station in another school district, giving us four stations, and the other child welfare organization opened a small station. We have a way of cooperating, if they want anything all they have to do is to ask us, and if we want anything all we have to do is to ask them.

As I read over Dr. Baker's reports and the Children's Bureau reports I began to see light, and in this great field of child hygiene I gradually began to eliminate until now I cling to the prenatal with all my strength. If we had more nurses we might go further, but with three nurses doing all the work we cannot attempt too much. I think the campaign should be carried to the expectant mother of the first child, and that means prenatal care and maternal nursing. After that we may have all the other organizations that may be warranted, well and good, but in the meantime, how to reach these women is the problem. We had a meeting of the most prominent obstetricians; our commissioners thought we wanted the pediatricians, but I said that they were too late, we wanted the obstetricians. We had a real row. I was a little ashamed because we did not like to lay our difficulties before the layman. But we do work together; Dr. Palmer is the medical director of schools and if we want anything he gives it to us, and if he wants anything of us he comes over and takes it. And so it is with the hospitals, and with our commissioner, who is a real, hundred per cent, red-blooded man, and what he wants he will have and get. Syracuse is on the map and it is there to stay. We are not going to make the baby the by-product, because we all believe that the health of the baby is the health of the world and of the nation.

The Chairman: We will now take up the question, "how can prenatal work be begun." We will begin by hearing from the states in which the prenatal letters have been used. Dr. DeVilbiss, will you speak on that subject? I think you originated the plan.

Prenatal Letters

Dr. Lydia A. DeVilbiss, U. S. Public Health Service, Washington: I have an idea that Dr. Sherbon, my successor in Child Hygiene in Kansas, can give you better statistics on the number of mothers reached by the prenatal letters. We know the mothers we reach with the prenatal letters are the very cream. The letters are intended only for the most intelligent mothers, but if you could see the appreciation and the splendid results we got from those few mothers that we were able to reach, you would understand why I am heartily in favor of the prenatal letters. We are apt to forget that all classes of mothers need this work, the middle class and the cultured mother. If we only reach her and she tells us that the letters are helpful, I think it is a very worth-while piece of work.

Dr. Florence B. Sherbon, Director, Division of Child Hygiene, State Board of Health, Topeka, Kansas: In regard to the prenatal letters, I will say that I have not done anything with them except to use them just as Dr. DeVilbiss turned them over to our care. We have had, as I remember, some twelve hundred mothers take the confidential registry letters during the past year. While a good many letters did come in from intelligent women, expressing their appreciation, as Dr. DeVilbiss has indicated, the letters that appeal to me the most are the ones from mothers in remote parts of the state, to whom these letters have meant a great deal in actual personal service, something they could not easily get in any other way. While I was in the Kansas University, developing some correspondence courses, I started a correspondence course on The Health of the Family, including a short course in obstetrical care, the care of the expectant mother, of the mother at birth, and the care of the child. I had to drop that when I went over to Topeka, but I have in mind, when I can get to it, the combining of these two ideas in a simple correspondence course in the prenatal development of the child and care for the child at birth, which course may be taken by any woman, whether she is pregnant or not, or by a young woman who expects to be married, but I have been unable to accomplish that as yet.

I had the advantage of coming into the Kansas Division of Child Hygiene following Dr. DeVilbiss and of building on her very excellent foundation. I found the people trained to cooperate. My work has been a very great

pleasure thus far on that account. Dr. Rude asked me to tell you something about the cooperation of the various agencies of the State with the Division of Child Hygiene.

Working Out A State Program

We are operating on a pre-war budget. We had no division of public health nursing; we do not even have a nurse. I found myself absolutely single-handed, except for office service. I figured that I could do very little for the half million children of the state so far as personal service was concerned and that what I accomplished must be through societies and agencies. I found a good many letters from women over the state asking what they might do as groups and as individuals. I first thought I would work out a state program and ask everyone to help, but the more I thought about it, the more I thought this was not the right way to go at it. So I asked each of the women's state organizations to furnish me with a representative on a state central Child Welfare Committee. I got this committee together and we formulated a state program. It is not my program, not a Federation, or W. C. T. U. program, but a state program. It is big enough so that there is a place on it for anyone who wishes to do anything for child welfare. Each county surveys itself in a state-wide survey. As a central committee we supply all assistance and advice and encouragement to that community. We asked the Governor of the state to appoint a Children's Code Commission. Absolutely nothing has been spent for any of this work, and there is no way of getting any state money or any funds. We have worked so far without any funds. The Commission was appointed by the Governor in July and has done very good work. It bids fair to have a report ready for the Legislature at the next Assembly, making only a few important requests at that time. We have found out that people are willing to pay, as well as work, and a fund is now being raised. We expect to ask the Legislature to continue this Commission to carry out the work for the next two years. We have had a very interesting cooperation everywhere in the state. The teachers in the state have cooperated in weighing and measuring school children. We have free dental inspection. My Division cooperated in forming dental blanks and to this has been added a simple physical inspection; we ask that these cards be returned for statistical use. It is interesting to note that we have received returns from 3,000 teachers, and this covers more than 40,000 children who have been weighed and measured and had some inspection by the teachers themselves. I have this and a great mass of other statistical material in my office, which we are absolutely unable to handle with our present force. One of the most helpful things has been the cooperation of the papers. Mr. Odell, of the Research Bureau of the Capper publications, has placed his statistical department at the service of the Division of Child Hygiene to tabulate the survey and the physical inspections, and put the mass of material in such state that it will be available for propaganda and publicity. We have had wonderful cooperation from the State University and the Agricultural School. They

have assisted in making inspections and dietetic studies in the Children's Homes and Institutions. These dietetic studies correlated with the physical reports will make a real contribution to institutional literature.

We have also had great cooperation from the nurses of the state who do not belong in the State Board of Health officially, but they do cooperate and we work together in Children's Health Conferences and in carrying out our mutual programs. So I am convinced that people do not need to be urged to make them willing to do Child Welfare Work; only show them a logical program and give them a chance to work.

The Chairman: Thank you, Dr. Sherbon. Kansas has been very interesting in that the state has centered around the Child Hygiene Bureau.

Now may we get back to our prenatal letters? Other states have used them—may we hear the experience of Massachusetts with the prenatal letters? Dr. Champion?

Dr. Merrill E. Champion, Director, Division of Hygiene, State Department of Public Health, Boston, Mass.: Madam Chairman, Ladies and Gentlemen. As regards prenatal letters I may say that at first we used Dr. DeVilbiss' letters in a modified form and since then we have changed the letters again so that now we have a set of letters which we think will reach the well-educated woman and the scrub woman as well. It was something of a job to arrange them properly. I think that perhaps we have tried to specialize on the illiterate woman rather than on the highly educated, but we are getting replies that make us feel that both are actually reading the letters and appreciating them. Some of the letters come from women who scarcely know how to read.

I rather differ with Dr. DeVilbiss in her idea that these should be made to reach the well-to-do more particularly. I think that they should reach the other classes rather than the educated class, if any distinction is to be made. We now have on our list between two and three thousand names. I think the work is well worth while.

An interesting question came up with regard to the prenatal letters as to whether we should have them printed in any other language than English. On general principles I am opposed to the idea of having our educational material in any language but English. You may be interested to know that I brought this question up before seventy-five students of all races who were interested in Americanization problems and there were only two who disagreed with my idea about educational material in foreign languages. However, I am inclined to think that perhaps the prenatal letters should be an exception to that rule. We are now putting them out in Italian to try out this idea. The reason for this discrimination is that we really depend upon the children to read the printed matter to the mother. It is doubtful if it is wise to have the prenatal letters read in this way by the children to the mother. I thought we might make an experiment in Italian because of the large Italian population in our cities.

The result of our whole experience with prenatal letters is that we have thought it worth while to continue and extend their use.

Dr. Ethel M. Watters, Director, Bureau of Child Hygiene, State Board of Health, San Francisco, Cal.: I might say that California used the prenatal letters during Children's Year and they are now being revised in order that they may be used more extensively.

Miss Rose M. Ehrenfeld, Director, Division Infant Hygiene and Public Health Nursing, State Board of Health, Raleigh, North Carolina: Our prenatal letters are written from a nurse's viewpoint. The Kansas and Massachusetts letters were reviewed first and then our series was written with special reference to use among Southern mothers. We are averaging 300 a month and 3,600 a year seems like a pretty good number when you consider the large rural population. However comparing this with over 70,000 births, last year, we have not gotten very far. In classifying the agencies reporting the cases, the nurses are first, physicians second, followed by midwives, social workers, patients themselves, etc. These letters have the indorsement of many physicians throughout the state. I think it only a question of having the nurses throughout the state meet the midwives in order to get them to register and cooperate in reporting prenatal cases.

Dr. DeVilbiss: I have been asked by several people how we get the names. We secure them through the W. C. T. U., the Woman's Club and through the churches.

Prenatal Care

The Chairman: We seem to have covered the question of prenatal letters fairly well. We will now take up the question of how to secure attendance at the beginning of a prenatal clinic. I wonder if Dr. Janet Campbell, of London, head of the Department of Maternity and Child Welfare of the Ministry of Health of England and Wales, will tell us their experience. We all know that England is far ahead of us in prenatal work.

Dr. Campbell: We have been thinking a great deal about prenatal care in the last few years. I do not know that we have made very great progress, but we feel that it affords perhaps the only way of reducing our infant mortality during the first month, and partly for that reason and partly because in the past we have really neglected the mother's own health as compared with the health of the baby when it was born, we are anxious now to get into touch with the expectant mother as soon as possible. We have no "prenatal letters" such as have been described, and we have a good deal of difficulty in getting hold of the expectant mothers, largely because of their natural shyness. The mothers are loath to acknowledge their pregnancy. They will come to an institution and "book," as we say, and register for a midwife, but they do not usually consult a doctor long beforehand, and there is a good deal of prejudice, rightly or wrongly, against taking any public action which might hamper us later on in our attempt to help them.

I think that 60 or 70 per cent of the babies in England are delivered by midwives, on the whole with good results. In some areas the number is as high as 90 per cent. We have of course good and bad midwives. The midwife is as a rule the person first consulted by the expectant mother. A woman will go to her and consult her and confide in her, and the advice given by the midwife largely influences the action the mother will take. We feel, in view of this position, that it is important for us to cooperate with the midwife and get her to realize the necessity of prenatal care, and so we are trying to impress upon all midwives that they should advise the mothers to come to the prenatal clinic and consult a doctor as early as possible in the pregnancy so that such assistance as may be necessary may be provided. We also try to arrange class instruction, to small groups of mothers, in general and personal hygiene, also to give them some idea of the care the baby will need afterwards, of making the clothes, etc., and to get them to realize that after all, although pregnancy is a physiological condition, mothers suffer from many ailments which can be remedied. The number of prenatal clinics is increasing rapidly, and we find that it is most satisfactory to associate them with the infant welfare clinics, because if we can get the first baby and so secure the mother's confidence, she will come to us afterwards with successive babies, and we can get an excellent influence.

We also have a good deal of visiting by our Health Visitors, which correspond to your Public Health Nurses. The visits may be paid to the expectant mother if the Health Visitor knows of the condition, and to the baby when it is born. All births are visited by the Health Visitors, and we hope that these Health Visitors will not only persuade the mothers to go to the clinics, but will establish themselves as family friends and advisers and do much to educate the women in the need for the prenatal and postnatal care.

We are also trying to increase our maternity beds and are gradually getting a number of Maternity Homes established. These are not large institutions, and not hospitals, but rather small homes with perhaps twenty-five to thirty beds. These are chiefly for mothers with unsuitable homes, who prefer to come into an institution, and we hope in this way to create a higher standard of midwifery throughout the country. The work is all rather new, but we are making a good deal of progress and I think we shall get good results eventually.

A question was asked here about prenatal work in connection with the Cincinnati Social Unit.

The Chairman: If there is a representative of the Social Unit of Cincinnati present we shall be glad to have this question answered. Perhaps Miss LaForge can tell us something.

Miss Zoë LaForge, Washington: I am sorry that Mr. Dinwiddie, who was connected with the Unit has left the session. I have been associated more recently with the state department of health and have not been think-

ing along Social Unit lines, though I am particularly interested in the work the Social Unit proposed and was carrying out. When the evaluation was made I spent a great deal of time with the nurses and discussed with them the relation of the nurse to social service. I also had an opportunity to talk with the directors of the agencies within the city of Cincinnati, in order to try to get as many points of view as possible with relation to the Unit and other programs in the field. Those reports have been published. I do not know how generally they have been distributed throughout the country but it is probable that that experiment, although it had been abandoned since, will contribute to the whole subject throughout the country. It is interesting to know that the plan as it was developed in Cincinnati is being used in modified forms in other cities. For instance, the general nursing plan which was adopted in Cincinnati embraced the program for prenatal work, the work for infants, the maternity and prenatal work, which all had been undertaken one by one, and which eventually were coordinated into a single program. The group had the advantage of working with the children's clinic and with the tuberculosis clinic. They undertook bedside care and gave bedside care to tuberculous, to maternity patients and to sick children. I am not sure at the present moment just what proportion of prenatal patients were reached by the instructive service of the nurses. An attempt was made to reach 100 per cent. Their program was 100 per cent health service to the community, but that was not accomplished in the three years the plan was in operation. However, the achievement seemed to me a very remarkable one, and one toward which we might all well strive. The conclusion of the evaluation was that the plan might well be extended to other districts, but this should be undertaken very slowly, with careful study and measurement from time to time.

The Chairman: We will pass on now to the subject of Health Education for Rural School Children. Three states wanted that subject discussed at this time. I will ask Dr. Knight, who has been doing the work in this state, to tell us about the plan.

Dr. Carlisle Knight: When I wrote in to ask about that it was not my plan at all but that of Dr. Lowry of Mississippi. I am sure she will tell us about her plan.

Health Education for Rural Children

Dr. Edith B. Lowry, Mississippi: The plan is not worked out very accurately, but it is a plan I worked out in the district where I had my headquarters last spring. I talked it over with the commissioner and then presented it to the president of the Normal School. We have not started it yet in Mississippi but may do something later. The idea there was that they might not have full time health officers and could do very little in the rural sections, but we were able to get public health nurses for each county. We

planned to have the nurse go and do part of the work in the rural schools and then the health officer, who had to inspect the buildings, should be informed about the children who needed attention. He agreed that he would look after the children who had been set aside on this preliminary examination. Then in the first month of the year we were going to start out weighing and measuring them. We found we could interest them in this way because we could stir up a rivalry between the boys and girls as to which would reach normal weight first. Then during the month the lessons were correlated to show the relation of the physical defects to the weight and the nutritional work and other things under that. Then it was suggested that we would devote the second month to the eyes, having the eyes tested by the Snelling charts. The teachers would do this because this work was being taken up in the Normal School. Then there was the examination of the eyes for trachoma, and then the teachers would take up the lighting of the room, and the use of amber shades instead of dark green shades. Then in the third month the teeth would be taken up and the lessons on proper mastication of food, followed by those on digestion. During the fourth month came the lessons on the tonsils and adenoids; during the fifth those on chest expansion, and following that lessons on ventilation and problems of that sort. The sixth month was to be devoted to the necessity of exercise and the eighth to hearing.

This seemed to be a plan which could be worked out in the schools, and they thought it was practical because it would get the interest of the children first. The average lessons in physiology and hygiene are very uninteresting. I taught these several years ago for five years, because the state law required it, but I think the children never learned anything, but when it is taught in this way we thought the children would get a practical working basis that could be carried out in their homes.

Studies of Infant Mortality

The Chairman: I would like to ask Dr. Potter to tell us what she is doing along the line of research.

Dr. Ellen C. Potter, Chief, Division of Child Health, State Department of Health, Harrisburg, Pennsylvania: I think you all recall the very interesting paper of Dr. Woodbury yesterday afternoon. When I saw Pennsylvania with those disgraceful infant mortality statistics, worse than elsewhere in the United States, I felt like leaving the miserable infant on the statistician's doorstep and running away.

We were aware of our shortcomings and for many months have been studying the situation in the hope of correcting it. We find in our various counties that our infant mortality is high where the birth rate is high; where there is marked congestion of population, although in some cities this has been counterbalanced by active child health work; where the foreign element is also largely represented and where ignorance is great.

We were very fortunate shortly after I came into the Division in having granted to us a considerable sum of money for the study of the causes

of gastro-intestinal disorders of infancy as bearing upon infant mortality. You will recall that the death rate from this cause was high, as noted in yesterday's paper.

We undertook the study in Homestead as representing a characteristically foreign group in which almost no public health work was being done; and in York City, in which we have an intelligent, prosperous, native-born community which is served in its public health program by a very active and efficient Visiting Nurse Association, which is affiliated with the American Child Hygiene Association.

We have been making our study from as many angles as possible. The nationality, social status, intelligence of the mother, the housing of the family, the home sanitation, care of the food, prevalence of flies, very exhaustive meteorological observations are made within and without the home, at various stations throughout the city and at one central station. These observations cover maximum and minimum temperature, ground temperature at one, two and three feet, wind direction and velocity, humidity, rain and snowfall and various other items.

The well babies are visited at least once each week and the sick babies daily. Careful clinical observations are made and at once recorded. Laboratory examinations are made once upon the stools of the well children, but at frequent intervals upon those who are ill. The milk supply has been most carefully studied. The housing of the persons cooperating, numbering more than 1,000 in each city, has been studied most thoroughly—the opportunity thus offered to our Division of Housing of the State Board of Health being most unusual.

In this investigation the Department of Sanitary Engineering, through its Housing Division and Milk Inspection have cooperated as have our Clinical Laboratory, Division of Vital Statistics, Division of Nursing, and Child Health. The remarkable feature of the study has been the hearty cooperation of the mothers and fathers in both cities, over a long period of months; 100 per cent in Homestead where it was feared we might be refused admission since the people have been most suspicious of "outsiders" since the steel strike; in York cooperation was close to 99 per cent perfect.

Our observers have offered no nursing service—they were instructed to see things as they were. We are told by physicians that this has resulted in a most marked stimulation of practice among children whose mothers brought them to the doctors on the advent of any early symptoms of disease.

It has been gratifying to find not a single failure of birth registration in York; the same cannot be said of Homestead.

On motion duly seconded the session then adjourned to reconvene the following morning.

ADJOURNED SESSION

The Chairman: We will begin this morning on another question, the advisability of establishing health centers and clinics in isolated regions,

and to what extent they have been successful. I will ask Mrs. Dillon to tell us about her experience along this line.

Health Centers In Rural Communities

Mrs. Jean T. Dillon, Director, Division of Child Hygiene and Public Health, State Department of Health, Charleston, West Virginia: Our state, as you know, is one of the "hill states." We have some agricultural territory, but much of it is in hilly country and much of it is isolated, as are many of our towns and villages. There is only one large city in the state, and that one has a population of only 150,000. A great deal of our health work is among isolated people. The work is comparatively new in West Virginia, and we want to begin it in the best way possible. It seemed to me this convention should be a good place to learn of the different health educational means tried throughout the country, from the people who are doing the work—why certain methods were successful and why certain others failed, and I hope the discussion will bring this out for the benefit of those of us who need it.

The reason I asked the question concerning "the advisability of establishing Health Centers and Clinics in isolated regions and to what extent they had been successful," was because of a letter from an experienced health worker recently in which the writer definitely stated she did not believe health centers and such methods would work at all in isolated districts and that the only way to reach people living there would be to take the work and information into the home by personal visits. While I do believe this is the most effective method, it would mean a tremendous undertaking for a whole state and a very slow way to reach the people. I hope others will tell us of their plans and experience.

Mrs. Mary P. Morgan, Director, Bureau of Child Welfare, State Board of Health, Madison, Wisconsin: I have been asked to discuss this question a little later in connection with one of the papers to be given this morning. I may say now, however, that the work is very new and I hesitate to talk about it for we are just getting a start. We are trying to devise means of serving the rural communities because our problem is largely rural and we must plan for rural needs. The first step is to establish the public health nurse, then stimulate the people to cooperate with her and make use of the service which she can render. This can be done more effectively through health stations in each community. In one county the health stations are being established by the county community council. One township, without a village in it, insists upon having a health station. The town hall will be used. This township has a very live community council and the equipment for the station has been ordered. In another community of nine hundred the health center is flourishing. The women of the village assisted the county nurse in organizing the work and every one in the community was interested. When no other room could be found in which to hold the baby conferences the Bachelors Club offered two of its rooms which are now being used regularly. The nurse visits the station bi-weekly and spends a

day there, always trying to have some special feature. At the second conference she had a child specialist come out from a nearby city, and at another time she had the height-weight tags to give to each child weighed. She tries each time to have some little feature that will bring the mothers and children in and develop the habit of regular attendance. At the last conference held there were fifty-four present. In another county the nurse tried without assistance to develop the baby stations but the plan was not successful. The attendance was not good. The community had not first been made to see the need for this work and when the nurse left the county to go to another field of work the stations went out of existence. I think the point we must always keep in mind is that the health stations or health centers to be successful must be developed by the people of the community rather than by the health workers. They will then be used and continue to function even though the nursing and medical personnel change.

Dr. Watters: In some of our counties in California we have found a quarterly conference to be held with members of the Bureau to be of much service, and we have emphasized dental hygiene. A dental hygienist brought with her some very fascinating little models, but the thing which attracted fathers, mothers and children was a large plaster cast of the mouth and a tooth brush which was large enough to sweep the floor. While she was demonstrating the tooth brush drill she told them to take care of the temporary teeth as well as the permanent. These conferences have been very successful. The conferences in the other counties are held in the county seat once a week and if the mothers wish they can bring their children there. Public health nurses have found that many children are brought there, although in some instances it means traveling a hundred and fifty miles.

Miss Ehrenfeld: So far as the rural clinics go, we have very good diagnostic clinics for tuberculosis, where a supervising nurse from our bureau, together with the county public health nurse and a diagnostician from the state Sanatorium make the clinic personnel. This standardizes such work throughout the state and such clinics give the rural people an opportunity for a thorough chest examination by a man who knows tuberculosis in its incipency. From the viewpoint of rural work these clinics are very satisfactory where the nurse follows up the work with demonstration and instruction in the home, teaching proper care of the patient as well as protection of the family.

We have a few small health centers, but it depends upon what you mean by a "rural community." In North Carolina we speak of a "city" when the population numbers a few thousand. In the mountain section there is one small health center functioning, where the nurse was given a couple of rooms by the Masonic order, the Red Cross contributing the equipment. This she can use as a teaching center. She has had some tonsil and adenoid work done by a surgeon from a distance. A few of the county nurses are trying what they term "baby keep-well stations" throughout the county. I am not prepared to speak of the success of these at present but

feel they are quite promising; the mothers coming from a radius as far as practicable. There is some question as to the advisability of the country mother coming a distance in the hot weather, with possibly a nursing baby and two or three other children clinging to her skirts. Unless there is a physician present for conference it is asking a great deal of the rural mother to come a distance to meet the nurse. I think it more important for the nurse to meet the mother in the home and am sure the mother will appreciate it more and get more from the visit. Means of transportation to health centers will likely be possible in time to come, but I feel there should be some medical advisor available.

We have had some success with weighing and measuring centers and the nurses are having group conferences, but as to health centers in the way we think of them, I believe we have none.

Dr. Potter: In Pennsylvania we have been in a more fortunate position than many of you, perhaps, in that we had some machinery which could be made available for children's work. We had a corps of tuberculosis nurses and it was possible to utilize a portion of their time in the work for children, since it so directly contributed to tuberculosis prevention. They were accustomed to the technique for adult tuberculosis work, and some could not see the connection between the child health conservation and the prevention of tuberculosis in the adult. It has been possible to re-train the nurses so that they are now accustomed to handling the child health problem and in nearly every county we now have the beginning of child health center work.

We have in the state numerous agencies which employ public health nurses and we are encouraging them to work along the lines we have indicated.

We loan our own nurses to any community within reasonable distance which is interested in establishing a health center and once a week they visit them and hold a consultation hour, sometimes with and again without a physician.

Our aim is to show each community how it can finance its own work, either by voluntary contributions through the Red Cross, Anti-Tuberculosis Association, etc., or out of the local government budget. We consider ourselves responsible financially for at least one model health center in the county.

The question was brought up last night as to how we may interest the expectant mother in prenatal care. My plan is to interest the mother in the care of her child and get her later to come to the nurse for advice for herself. A few women thus served will give the needed publicity to draw other women to the station.

Our greatest difficulty is to get men and women physicians to take charge of these stations. We have a long way yet to go before the rank and file of the medical fraternity shall be found sufficiently interested in preven-

tive work to wish to undertake it and until they shall have acquired the technique to do the work well.

Dr. Sherbon: Our nurses in Kansas are conducting various kinds of health centers and the term "health center" has been adopted. I have in mind one health center which was established in a public rest room. I think public rest rooms hold very definite possibilities, especially as to rural mothers. They go through this public comfort station and rest room, and if the room is equipped with charts on the wall and the matron has health literature to distribute, and if the public health nurse holds a weekly clinic and gets the interest of those mothers it is possible to reach them when they would not go to a stated place. This particular center which I have in mind was started in a public rest room. On Tuesdays the nurse held a clinic for the town mothers and children and on Saturdays for the rural. She was assisted by the local physicians and had a schedule of service. This finally developed into a full-time health center and was moved into the quarters of the full-time health officer; other nurses were added and laboratory service, and that county now has a full-time health service.

In another county, in which there was a full-time health officer and one county nurse, they have gone from village to village carrying their equipment with them, holding children's health conferences in the school house at each place. At other times they have gone from school to school and have managed to weigh and measure and physically examine all the school children in that county. I see no reason why any county health nurse may not establish a simple health center in her office. A good many of our nurses are doing that. Other county nurses I know have scales in their offices at the county seat and once every week or two weeks or once a month, they have a public conference and physicians come and examine the children that are brought to these centers. I think wherever there is a public health nurse she may conduct health center work in her office.

Miss Margaret K. Stack, Chief, Bureau of Child Hygiene, State Department of Health, Hartford, Connecticut: I think probably there is no one here who is not trying to do prenatal work. Without going into too many details there are certain things which I would like to have considered by a group of this kind.

First, how much prenatal work should a nurse do without a physician.

Second, is it wise to advocate having well baby conferences when no physician is available. These are difficult points for nurses to decide.

Third, how are we to use to the best advantage the nutritional workers which are at our disposal.

Fourth, in regard to dental work, we all know that dental clinics are needed but we have not been able to meet that need. Everybody knows what has been done in Bridgeport, but Bridgeport has only 150,000 people out of the whole state of Connecticut.

It would be very helpful if any or all of these questions could be discussed by this group.

In Connecticut the Bureau of Child Hygiene and Public Health are together. We are developing a generalized nursing program. The State is not able to subsidize the towns so they are responsible for financing their own work. The plan in each town is to have a health center eventually. This will include the nurse's office and whatever conference and clinics the town is able to maintain. In Connecticut the town is the unit and not the county. The nurse in each town is to do bedside nursing for those unable to obtain it otherwise with special emphasis on prenatal, infant and child hygiene, and tuberculosis nursing. It is somewhat amusing to come to a conference of this kind and hear nurses tell of a well baby conference at one center in a county when we feel it is something of a task to get mothers to come to a central point in a township that is perhaps 6x9 miles.

Nutritional Work

The Chairman: We will have to leave our first question now, in the hope that it will be discussed fully at the time of Miss LaForge's paper at the regular session this morning. We have had nothing at all on nutritional work. Dr. Champion, will you please tell us what your state has been doing on this subject?

Dr. Champion, Boston: I think nutritional work is something that has been neglected very much in the past. We have an immense sized problem on our hands in nutritional work. It has never been clearly worked out as yet as to the part which the nutritionist and the dental hygienist are going to play in public health activity. Our plan is to urge in local communities a health center with a nutritionist. I think that for a long time to come the nurse will have to do the detailed work of nutrition; to carry out the work in the home; but she should have a nutrition expert available to deal with the special problems that are bound to come up. I think that if we do not take steps in this direction shortly, we shall soon have another group of specialists doing public health work but not in any special relationship to any other group. If we are going to do this nutritional work properly we must see to it that nutritionists are taken into the group of public health workers and made to feel that they are an integral part of the whole public health movement. They must not be interested only in the economic side of the work or with such problems as the production of milk. I do not know that I can offer any further suggestions but I feel that the plan that I have outlined is a workable one. It is working well in our state. We have nutritionists on an advisory committee to the Department in addition to the services of a whole-time nutrition worker and I think that in our state the nutrition workers feel that they are public health workers rather than a group apart.

Miss Ehrenfeld: In the demonstration for the State Fair we have planned for quite an elaborate nutrition demonstration, starting with the infant feeding booth (with demonstration of preparation of substitute feedings) and in the next booth exhibiting diet sheets for different age groups, placing them on separate tables and exhibiting in front of them the prepared meal for the several age groups. School lunches will be placed on tables in the

next booth and the subject of feeding the family discussed. This type of exhibit will be practical for a moving crowd.

Dr. Potter: In taking up this work our first visit was to Dr. Josephine Baker, our leader in child health conservation, and our second to Miss Pearl McDonald, Director of the Extension Service in Home Economics of State College, who had a corps of nutrition workers serving in various parts of the state. This conference demonstrated the intimate relation existing between their work and ours and we agreed to work together wherever possible in our state.

On our own staff we have one thoroughly trained nutrition expert connected with the clinic in Philadelphia and to that clinic we are sending our staff nurses as they can be released from the field for intensive periods of training. Ultimately we shall have in every county at least one model center for nutritional work.

During the early summer it is the custom in our Department of Health to hold a training camp at which the attendance is compulsory for the County Medical Directors, and for the nurses who can be absent from the field. The work given is both didactic and practical. The camp is pitched on the grounds of our tuberculosis sanatorium at Mont Alto and the lecture hours are so arranged that there is ample time for recreation. By this method we hope to keep all our workers "up to the minute" in modern public health thought and method.

Our nurses are instructed, wherever they see that nutritional work should be done in any district, to communicate with Miss McDonald of State College and she sends one of her workers to cooperate with our nurse, and they together establish nutrition centers, sometimes in the schools and sometimes in the health center, in this way a county is very thoroughly permeated with the nutrition idea.

Dr. George Smith, Division of Child Hygiene, Toronto, Ontario: We have had no experience with nutrition workers as such, or else I do not recognize the class. It seems to me the more we go along the line of specializing the more we are confusing what we started out to do. So far in our clinics our nurse has been the nutrition worker, and I think she is the one who should give all the instruction necessary to the mothers who will bring their children to the clinics during the nursing period and during the pre-school age. I can quite conceive that in a large clinic where you have your nurses and a large number of mothers, the mothers could be taught. We have three or four clinics in Toronto where we have sixty or seventy babies at a clinic, but as yet we have not been able to establish a department where this could be done. The nurse goes into the home and teaches the mother how to make up the particular food which the physician has prescribed. Concentration along those lines ought to do a great deal. Have the nurse go in and teach the mother exactly the fundamentals she requires and she should be able to produce food that the child will grow upon, without any specialized teaching. I can quite understand that in the large clinic

after you have it very well established that this might be worth while, but in the smaller ones I think it is not essential.

Dr. Watters: In the instruction of mothers concerning the feeding of infants and children the first assignment from the Extension Division of the University of California covers a survey of the classification and uses of foods. The second assignment, the building uses of foods and the regulating uses. The third, the further classification of foods. The fourth, the diet of the expectant and nursing mother. The fifth, food needs of the infant. The sixth, digestive disorders and weaning. The seventh, growth, and the eighth, feeding the school child. These assignments the mothers find very interesting and the course is given throughout the State and throughout other states as well. The Home Demonstration Agencies of the Farm Bureau are working this up among the farm women in order that there may be classes. In counties where there is no other organization dealing with health, these Home Demonstration Agents are most grateful to use this course. More information may be obtained by writing Dr. Agnes Morgan, University of California, Berkeley, Calif.

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NURSING AND SOCIAL WORK

ROUND TABLE CONFERENCE

Miss Winifred Rand, Boston, Presiding

The Chairman: Before we begin our general discussion there are two matters which it seems wise to bring before the group this morning because they are problems which are very much in our minds today, and on which we can probably give some help when we go back home.

First, in regard to the serious situation we are facing in the shortage of nurses. You all know the college song, "Where, oh! where are the grave old seniors"—we are now singing "Where, oh! where are the nurses." Miss Leete will tell you the plan for meeting this problem.

Miss Harriet L. Leete, Baltimore: I will not take your time for reading the complete plan, for you can get it through the Headquarters of the National Organization for Public Health Nursing. I have a copy if anyone wishes to see it. What I do think would be wise for the American Child Hygiene Association to do would be to endorse that plan because it has been adopted by the Nurses Associations. We have drafted a few resolutions which, if you approve, we will pass on to the Resolutions Committee.

Miss Leete then read the following resolutions, which were later approved by the Committee on Resolutions and the Executive Committee:

National Plan for Recruiting Student Nurses

Resolutions presented from the Round Table Conference on Nursing and Social Work of the American Child Hygiene Association meeting, St. Louis, October 11-13, 1920, and approved by the Executive Committee.

WHEREAS, every community is facing the problem of a serious shortage of student nurses in Hospital Training Schools, and

WHEREAS, properly qualified nurses are an integral part of every Child Health Development Organization, and

WHEREAS, the National Nursing Associations and the American Red Cross have outlined a program which may be put into operation in the most effective way in every community through the formation of a Student Nurse Recruiting Committee; therefore, be it

Resolved, That the American Child Hygiene Association place itself on record as endorsing the plan presented by the National Nursing Associations and the American Red Cross, and

Be it further resolved, That every delegate and representative attending the Eleventh Annual Meeting of the American Child Hygiene Association be urged to present this program to his or her community, or if the program has already been presented, that they render all assistance possible on every occasion towards stimulating interest in the Campaign for Recruiting Student Nurses.

WHEREAS, fundamental principles relating to child health, both physical and mental, should be known to every nurse, and

WHEREAS, every well trained nurse should be able to recognize early symptoms of sickness in children, especially in communicable diseases; therefore, be it

Resolved, That the Nursing and Social Work Committee also recommend that the members of the American Child Hygiene Association render all assistance possible to Training School Superintendents and Instructors of Nurses so that they may secure facilities for giving such instruction and practical experience in the care of the child.

The Chairman: You have heard the resolutions which this meeting has an opportunity of recommending to the Resolutions Committee, as something we would like to see adopted. The first resolution, as you see, is a rather inactive thing. We can all pass that and sit back and do nothing, but the second resolution, if we pass it, means that we must go back to our communities and do something in this movement, because it can only be successful if each of us, as well as others, help in forwarding it. Results are only reached by combined effort, and only by working for the resolutions will they be of value.

Upon motion duly seconded and carried the resolutions were duly referred to the Resolutions Committee.

Problem of Illegitimacy

The Chairman: Another matter upon which there has been real work done during the past year, and in which I am sure there is great interest, especially among those who are working in the field, is the problem of the illegitimate child. We are aware of the enormously high mortality rate among illegitimate children. Something very definite has to be done in order to meet this problem and something very definite has already been done in regard to necessary legislation. Miss Arnold of New York will tell us about what has been done and what has yet to be done.

Miss Mary Arnold, Executive Secretary of the Babies' Welfare Federation of New York City: I have been asked to give a very brief account of what has been done in the past year along this line. You probably all know that a conference on this subject was held last spring and was presided over by Miss Lundberg of the Children's Bureau. For a period of four or five months, local conferences on illegitimacy were held in large cities, and in many small cities as well. Those attending the conferences were the nurses, social workers, physicians, judges, etc. Schedules were sent out giving outlines of standards for proposed legislation and those were the topics discussed at these conferences. Then each local group was asked to send representatives to regional conferences, one in Chicago and one in New York. The one in New York was held after the one in Chicago. It was interesting after we had drawn up our resolutions, and had read them, to have the Chicago resolutions read and find they were almost exactly the same. From those resolutions has been drawn up a report which has been sent to the Commission on Uniform Law, which met here in St. Louis early in Septem-

ber. They have taken definite steps to make this a part of this year's program.

Here are the resolutions which I think you will be interested in and which I think have been sent forward to the Commissioners as they were presented by the Chicago and New York regional conferences:

**RESOLUTIONS ADOPTED BY THE NEW YORK REGIONAL CONFERENCE
ON LEGISLATION FOR THE PROTECTION OF CHILDREN
BORN OUT OF WEDLOCK.**

February 17, 1920.

Conference held under the auspices of the

Children's Bureau of the U. S. Department of Labor

Committee on Resolutions: MRS. ADA ELIOT SHEFFIELD, *Chairman*
EDWIN J. COOLEY
REV. ROBERT F. KEEGAN
L. H. PUTNAM
MRS. AMEY EATON WATSON

1. State Supervision.

a. The State should assume supervision and protection over all children born out of wedlock. The manner in which this duty may best be performed will be subject to the conditions and circumstances peculiar to each State. With due allowance for local variance and need, this conference recommends the creation of State departments having the responsibility for child welfare, which should include among their duties the assisting of unmarried mothers and of children born out of wedlock.

b. State guardianship should be exercised only over those children who are neglected or dependent or in danger of becoming dependent. The State department, however, should assure itself that every child born out of wedlock receives proper care.

c. The parents should not be permitted to surrender a child for adoption, or to transfer guardianship, or to place it out permanently for care, without order of the court or State department, made after investigation.

d. The State should license and supervise private hospitals which receive unmarried mothers for confinement and all private child-helping and child-placing agencies, to the end that unfit hospitals or agencies may be sufficiently improved or eliminated. Any such system of licensing and supervising can be successful only if it affords full opportunity for the development of private initiative and recognizes the need for cordial cooperation between the private agency and the State.

2. Birth Registration.

a. The registration of all births should be compulsory. The Bureau of Vital Statistics should report all births which are not clearly legitimate to the State department having the responsibility for child welfare. An effort should be made to determine paternity in every instance by case work, and when deemed advisable by legal proceedings. The father's name should be recorded on the birth record only when established by court adjudication or on affidavit or filed written consent of the father. It should be provided further in the law that the clerks of the court, having jurisdiction of proceedings to establish paternity should within a reasonable time report such adjudications to the Bureau of Vital Statistics.

b. An effort should be made, by good case work, to persuade the mother to give the name of the father, but this should not be compelled by law.

c. All records of births outside of wedlock should be confidential records, open to inspection only upon order of court, and all transcripts for school and work purposes should omit the names of parents.

3. *Establishment of Paternity.*

a. The mother should be persuaded, by case work, to start proceedings whenever possible. Otherwise the State department above mentioned should assume this responsibility. Action to establish paternity should be brought in all cases in which in the discretion of the department it is for the best interests of the child.

b. The proceedings should be instituted in a court having civil, criminal, and equity powers, and equipped with a staff of probation officers or other social case workers. The proceedings should be as informal and private as possible.

c. Proceedings should be initiated within five years from the date of birth of the child, or within five years after support has ceased or after informal acknowledgment of paternity. Every effort should, however, be made by the State department to establish paternity as early as possible.

4. *Father's Responsibility for Support of Child.*

a. The obligations for support on the part of the father should be the same for the child born out of wedlock as for the legitimate child. There should be a uniform law making desertion of a child of illegitimate birth an offense of the same order as desertion of a child born in wedlock, and an offense readily extraditable.

b. The court should have continuing jurisdiction during the minority of the child, both in regard to custody and support, with power to revise its orders as changing conditions may necessitate. Probation should be in the discretion of the court.

c. The court should have it in its discretion to accept lump sum payments.

d. Settlements out of court in order to be valid should be approved by the court.

5. *Inheritance Rights.*

a. After an adjudication of paternity or an acknowledgment in writing by the father, the child born out of wedlock should have the same rights of inheritance as the child born in wedlock.

b. The child's right to the name of the father should be permissive after an adjudication of paternity or an acknowledgment in writing by the father.

6. *Care by the Mother.*

The mother should be persuaded, by good case work, to keep her child at least during the nursing period whenever possible. When necessary, steps should be taken to secure for mother and child the benefits of the so-called mothers' pension acts.

7. *Legitimation.*

Subsequent marriage of the parents should legitimate the child born out of wedlock. The offspring of a void or voidable marriage should be by law legitimate.

Attitude of Unmarried Mother

Miss Arnold (continuing report): Now may I give you a few extracts from an interesting survey made in New York, while we were holding our conferences. We drew up schedules and sent them into the hospitals and homes where women stay before and after confinement, and in all we were able to get five hundred schedules. We asked just three things: the attitude of the unmarried mother herself regarding these fundamental questions:

- (a) Disclosing the paternity of her child.
- (b) Compelling the father to help support the child.
- (c) Towards keeping the child with her.

The study of the attitude of the unmarried mother herself was undertaken from a certain sense of social justice. The Committee felt that almost everybody but the unmarried mother herself had been given opportunity to express opinions on these highly personal matters. Of the five hundred schedules many had to be thrown out as they were marked by the case worker: "Mother's condition subnormal; not possible to give any report."

The value of the answers received lies in the fact that they were secured by workers whose relations to the mothers were such as to make the inquiries natural and sympathetic, and who had had ample opportunity to form a clear idea of the girls' personalities. Those cooperating in this inquiry represented seventeen New York agencies; five hospitals, three of which had social service departments, and two others which kept unmarried mothers for long periods of time before planning the next step for them; eleven convalescent homes and one boarding-out agency. In addition schedules were received from the Baltimore Henry Watson Children's Aid Society, from Mrs. Ada E. Sheffield of Boston, and from four Philadelphia agencies, the Girl's Aid, the Personal Service Bureau, the Mothers' and Children's Department of the Children's Bureau, and the Medical and Chirurgical Hospital Maternity Clinic.

Tabulation showed answers from all agencies to be proportionately the same and all the schedules, from whatever city, have been considered as a unit of testimony.

Willingness to Reveal Paternity

Of the 433 mothers only eighteen positively refused to disclose the name of the child's father and twelve others claimed that the names were unknown to them. Three of those who refused to reveal the paternity were expectant mothers who may have changed their minds later on. Of the others, fifty-five (13 per cent) were reluctant; sixteen (4 per cent) refused. We have here a number of reasons for refusal to give the name of the father:

A Russian Jewish salesgirl, aged nineteen, employed in an egg-candling factory, will not tell name because the man is Italian and she wants no support from him. Race seems to be the difficulty. Unwilling to keep the child.

American Protestant factory girl, aged eighteen, refused name because "trouble is all over now and why stir it up?" Wants no support as she has promised the baby to someone who has a good home.

~~American Protestant living at home, aged nineteen, is too ashamed to tell man's name. Thinks man should not be compelled to help support as he is too poor, is very young, and she considers herself equally to blame. Although she loves the baby her friends do not know of it and she hopes it will be adopted by her sister.~~

The "soldier father killed in France" type of reason for refusing to reveal paternity is not missing from the group. One such girl was not interested in possible pension money, and there are other inconsistencies in her statements. She has no idea of giving up her child.

Several refusals were explained on the ground that "the man is married. He wouldn't support the child, so it's no use to prosecute." Another said vaguely but significantly, "Oh, he might do it for a while, but—"

One girl refusing to tell the name or to prosecute or to keep the baby says she "cannot be disgraced. Must get rid of it and go back to home and work." She is a Russian Jewess, twenty-five years old, an operator on ladies' skirts and dresses. She is ignorant, frightened and stubborn.

The three hundred and fifty girls who were willing to disclose the paternity of their children acted from a variety of motives, among which the influence of the friendly social worker, of course, loomed large. Yet, unfortunately, she was not always able to swing the girls her way. Unstable nerves, cool and calculated revenge, knowledge of other mothers assisted by Court orders forcing the man to pay, or ignorance of what Court action involved, turn about in kaleidoscopic fashion through these records.

Support for the Child.

The second question, whether they were willing to seek or insist upon support for the child—willingness to reveal paternity goes along with willingness to prosecute for support, as has been indicated. Of the 433 mothers 275 (64 per cent) thought compulsion should be applied. Those thinking the father should not be prosecuted numbered 120 (28 per cent), and 38 (8 per cent) were magnificently indifferent.

Here again, their reasons for thinking he should or thinking he should not, run along the whole scale of human emotions. Fear was the dominating reason for refusing to do this—every kind of fear, from fear of the horrors of publicity and shame to fears of the questions the judges would ask, fear of seeing the man again even with the social worker and policeman in between, fear that if payments were ordered, the men would have to pay the money to them direct, or fear of revenge, or violence. One girl said "He might pay something but then he might get his gang to come and kill me!" Several girls were afraid to prosecute for fear the men would steal the babies. Just as many girls refused to prosecute "because the man was married" as were eager to prosecute, for the same reason. The greatest hindrance lies in what one girl described as the "whereabouts unknowiness" of the man.

One upstanding young negro mother scornfully rejected the idea of support because she "had \$10.00 in bank." And another, "A'int I got the right to support my child all by my lone self?" "What's he ever done for it? No money from him for me!" Still another quietly refused to sue for support because she was keeping the baby as a complete surprise for its father who was working in the south. Pretty soon she expected him back and intended to have the baby serve as a wedding gift. She is a bright little soul and is planning this little drama with much pleasure.

The third question was the attitude of the mother toward keeping her own baby. Seventy-three per cent were apparently willing to keep the babies; nine per cent were willing if conditions were made easy for them;

fourteen per cent refused point-blank, and four per cent were undecided. Some who refused had already promised the baby "to relatives." One, whose baby was several months old, has already given her pickaninny away because "in complexion it just matched an aunt."

Keeping the Babies

Dread of publicity was the reason back of most refusals to keep the babies. Virtuous relatives were frequently a deterrent. Or again, virtuous relatives were often the ones who made it possible to keep the mother and child together, and sometimes this required great moral courage. A worker speaks admiringly of a girl from a little New England farm. She first recited a carefully detailed story which involved an innocent man and later admitted she was shielding a married man. The fact that she had accused another person spoiled her case from a legal point of view and destroyed chances of securing support. But because of love for her child she shouldered her responsibility and marched back home with her baby "in defiance of public opinion in a rural community."

This kind of devotion is frequent—"Why, I'll work my hands and feet off for my baby if he won't help support it!" says another plucky young mother.

That report brought out many interesting things and is to be followed by a series of round table conferences, and it is hoped that many things will be cleared up. The filing of birth certificates is a question. In the Italian records there is no way of telling whether the child is legitimate or not, as all births are reported in the mother's maiden name.

At the present time it is said that the state of Minnesota has the best laws for the care of the child born out of wedlock, but it looks as if we were taking very definite strides for having the law for the country that is up to the Minnesota standard.

Dr. Mary E. Brydon, Chief, Bureau of Child Welfare, State Board of Health, Richmond, Virginia: I regret that I got in too late to hear the beginning of this very excellent report. I should like to ask whether the resolutions are recommending a federal or state law.

Miss Arnold (replying to Dr. Brydon): It is not possible to have a federal law. Therefore, the Committee has submitted resolutions to the Board on Uniform Legislation. They will draft a law which will be taken back to each individual state for them to pass upon. The interstate conference on illegitimacy is a nation-wide movement. Everyone has had a chance for representation.

The Chairman: We shall be very glad to hear from the Minnesota representative regarding their experience with this problem.

Minnesota Children's Code

Mrs. Margaret B. Lettice, Superintendent of the Baby Welfare Association, St. Paul: The 1917 Children's Code in Minnesota almost exactly

parallels the suggestion made by Miss Arnold, or the Committee on Uniform Legislation. The enforcement of these laws is the responsibility of the Children's Bureau of the State Board of Control, and under the Children's Bureau of the County Child Welfare Boards. In each county the Welfare Board consists of seven members appointed by the State Board of Control. These boards have the control of all illegitimate dependent children, the supervision of mother's pensions, and the feeble-minded. There have been County Child Welfare Boards formed in over two-thirds of the counties of the state and where there is no Board as yet the laws are enforced by the Children's Bureau. The 1917 Children's Code went into effect January 1, 1918. I am a member of the Child Welfare Board for Ramsey County and we have handled over three hundred cases of illegitimacy in that county. We make no lump sum settlements but after paternity is established an agreement is made for a monthly sum to be paid in to the Board and distributed by that Board. So if the child is not receiving the proper care from the mother we have a hold on them. We also have a three months breast-feeding law which we enforce.

Miss Zoe LaForge: Does your Board of Control publish a report?

Mrs. Lettice: Yes. If you will write to Mr. William Hodgson, Director of the Children's Bureau, at the State Capitol, St. Paul, you can easily secure a report.

The Chairman: Can you give us any results of your two years' work?

Mrs. Lettice: I am ashamed to say that before the law went into effect we were settling these cases for three hundred dollars. Now we never take a lump sum of less than five thousand dollars and very few lump sum settlements are made, so that the increase in the support for the child has been remarkable. We have been able to prosecute in nearly every case. Another thing we do is to return the girls from out of the state to their own states after the three months' nursing law has been complied with. The infant mortality rate has been lessened considerably. I can only speak for Ramsey County definitely, but among the illegitimates the rate was only 6.5 per cent last year. That is lower than in other places. The State Board of Control is co-guardian with the mother of all illegitimate children and such children cannot be given for adoption except in open court. The mothers are placed in families, many of them as domestics, and all are supervised by our nurses association. We have splendid cooperation with the Children's Bureau because of our association with the County Board.

Miss Arnold: What percentage acknowledge paternity?

Mrs. Lettice: We have never had any trouble. We have power to take the mother into the police court and ask her to tell, and if she refuses it can be treated as a case of contempt, but we have never had to resort to that in any case.

Miss Casey, St. Louis: How do you get the mothers?

Mrs. Lettice: From the birth reports if we do not know them before the children are born. All institutions must report. Also the physician or anyone having knowledge of a child which is illegitimate, or if born will be illegitimate, must report within twenty-four hours, and all maternity hospitals must report these births within twenty-four hours. There is only a very small percentage of the babies that we do not get. Of course, if any girl goes to the County Attorney's office to file a complaint against a man, before he will issue a complaint the girl is sent to a representative of the County Board. She must have their cooperation in order to get her complaint.

Dr. Florence Sherbon, Topeka: What do you do if the girl takes her child and disappears?

Mrs. Lettice: In order to do that she would have to go out of the state and we feel that very few are going to do that. They are doing this same thing all over the state of Minnesota. I know of only two cases that we have lost track of in Ramsey County. After they know us they feel that we are helping them and there is no object in their disappearance. We help them get better settlements than they could get otherwise. We have had no trouble with any of the reputable physicians reporting these cases.

Miss Casey, St. Louis: What is the attitude of the State Board concerning marriage of the father and mother of the child?

Mrs. Lettice: We do not enthuse about it and except in unusual cases we would probably discourage it.

Miss Bond, St. Louis: I want to ask what you would do when keeping the mother through the three months' nursing period would infringe on carrying her over the period in which she would secure a residence in your state. What do you do to send them back to their own state after that?

Mrs. Lettice: I do not recall that that has come up. Most of them come to the state just a few months before the child is born and we usually get through with the nursing period before the year is up. We do not like to have them stay because we cannot get a settlement for them as we can for the state girls, but if they are willing to stay and comply with all our rules, and go out as domestics so as not to be supported, we let them stay, but only when they are willing to cooperate. We cannot get the settlements for them that we can for our own girls.

If anyone is particularly interested I will be glad to answer any questions after the session adjourns.

Training for Child Welfare Nursing

The Chairman: I do not wish to stop the discussion if it is the desire of the meeting to go on with this, but I know there are other burning questions that we wish to bring out. This is not like prayer meeting, where there are awful pauses and one wonders what will be said next. There are any number of things we wish to discuss.

As the question for discussion at this Round Table have been suggested most of them have divided themselves into three heads—first, questions relating to training for child welfare work; second, relating to prenatal care and nursing, and third, questions relating to nutrition work and its place in public health work. The committee therefore presents these subjects to this meeting for discussion.

The logical thing is to begin with training and I think Miss Anderson of St. Louis, will open the discussion in regard to adequate training for child welfare work. Is it adequate? If not, in what is it lacking, and what can be done about it?

Miss Anderson, St. Louis: I have only to say that I think you have called on the wrong person, for while we are deeply interested in all the aspects of this question, we are not ready to tell of our results. I see many people here who might tell us better where we fall down.

I think the question could go back to the training school, and we could find out just how much child training the nurse gets before she receives her diploma. In doing post-graduate work, in public health, we have to accept the best material we can get from the training school and I doubt whether much study has been made from the training school angle for public health. I might say that I have felt for a long time that our best training schools, where we have a program of education that we are proud of, have failed to get over to the nurse in training the social aspects, and I think that will be remedied very largely when we can have on the staffs people who have that point of view, but the training schools have their own troubles just now. In our training school we have tried to take the public health question as a whole and not specialize. I said yesterday to someone that I did not believe we could specialize if we do the work well, and the only reason we were able to carry out a very extreme special program was because we did not get around often enough to duplicate.

We handle our training for child welfare work on the general training plan. We assume that the nurses we have in training have had fairly good work in pediatrics and the pathology of the child. We have lectures from public health officials, and from the children's clinic, and the physicians in the child welfare clinic are all paid and have to be specialists before they are put on the staff, so the contact with the specialist gives the student a very good insight into the problem, and we are trying to approach it as the child in the family rather than as a special branch. Our school is very young and we do feel that four months is very short preparation for public health at best.

The Chairman: I think the point of view of the training school, the point of view of the public health school that is taking the graduate nurse and training her for a special branch of nursing, and the point of view of the field worker who knows whether she has been properly trained for public health work, and knows her weakness and her strength, would all be very well worth while getting. Perhaps it is well to begin with the training

school, if someone can give us this point of view. We all know what splendid work is being done by the Rockefeller Foundation in the survey of training schools but as the work is not completed no report is yet available.

Miss Dora M. Barnes, Professor of Public Health Nursing, George Peabody College for Teachers, Nashville: We have so little time that I would like to vary our proposed program by asking immediately for suggestions from those of the medical profession who have had experience with nurses trained in public health nursing courses. I think the best thing would be suggestions from the medical profession on problems that we cannot get light on by ourselves, but what we can get from this group here. I wish we could have some definite suggestions from the medical people here about the things we should put into the preparation of public health nurses.

Dr. H. L. K. Shaw, Albany, N. Y.: Madam Chairman: I would like to make a brief announcement. The Nominating Committee of the American Child Hygiene Association has reported to the Board of Directors and Mr. Herbert Hoover has been elected President-Elect. Mr. Hoover was anxious to do something for the children in this country and stated that he felt our Association was the best method of doing this. We should feel very proud to have Mr. Hoover as our President and it puts a responsibility on each one of us to get as many new members as possible so that we can prove to Mr. Hoover that this Association is really the best means of doing something for the children in this country.

The Chairman: This announcement of Dr. Shaw's will be an inspiration to all of us. Personally, I think we should all try to get lay members for the Association and tell them of the work of the Association and interest them in the big child welfare problem of the United States. We need to turn our attention especially to the children here at home.

Dr. Shaw, before you go—we are discussing the training of the nurse for child welfare work, trying to get some point of view from the field worker and the training school. Miss Barnes has asked for definite suggestions from the medical profession as to what courses should be put in the schools for training the public health nurse. Won't you give us your opinion on that problem?

Dr. Shaw: I don't know that I can say much of value, but in speaking of the training in the general hospital, some public health work should be included. I think that has been neglected. I would be in favor of giving the nurses some training in public health during the last six months. Some practical social nursing should be included in the curriculum of the general nurse before she specializes in public health nursing. I think she should do actual work in cooperation with the existing agencies along the welfare lines, the visiting nurse, the tuberculosis nurse, the school nurse, and medical inspection of school children, the nutrition work, and all those factors which enter into the work of the public health nurse. The length of time devoted to this, of course, should depend upon the time at her disposal.

I do not know how long the course is, but I think some part of the time should be spent in general health work. I believe this is essential in the training of the general nurse.

The Chairman: I am very glad to have you suggest that, Dr. Shaw, for I am sure it is going to be done. The training schools are going through a transition period and are eventually going to prepare their nurses for public health work, I am sure. But Miss Barnes' question is, how can we improve the public health nursing courses? Can we hear from some one else?

Dr. Brydon: I do not know whether this is in order, but I hope it is. In my work with public health nurses I find things that I should like to recommend to all trainers of public health nurses who talk a good deal about education, but when they turn out public health nurses I find this attitude on the part of the nurses—that "I have a program to carry out and, further, that it is my program." I do not think that is the right attitude. I think the public health nurses that are turned out should go out as leaders. We have one in one county and I find that she has taken upon herself the minutiae of detail. She has a tremendously big factor at her hand which she does not use, and when asked to use it says it is unthinkable to use it, and that is the teachers. There is very little talk here about how you can put over the health idea to the public and there is no bigger factor than through the teachers. I was recently looking for someone to teach health by correspondence to the teachers of Virginia and you will be interested to know that those who were recommended knew nothing about health at all. That is a wrong idea. I believe that the nurse should use the teachers. Here is what I mean: I have had nurses refuse definitely to allow teachers to weigh and measure children. They would say "No, this is my program." Such a nurse will spend four days in one school weighing and measuring the children. She is too valuable to be used for that. She is a leader and that should be implanted into her in her training school and where she gets her public health work. She should be told that she is a leader, that she must get her experience and then use everybody she can, training them and teaching health, and implant a health consciousness in her community.

Dr. Richard M. Smith, Boston: I want to say a word about the technical instruction in training schools for nurses. It seems to me as we have worked out the problem in Boston the difficulty is to get people who have had the same sort of training with reference to older children that the public health nurse has with younger children. I have no suggestions with reference to the nurse who does infant welfare work, but the work with the older children has been a new factor. We have been very slow to recognize it as our responsibility, and we have also been slow to recognize the necessity for training people to do it. As I see the needs in the training, they are largely needs for which the medical profession is responsible. In my experience it is not the nurse alone, but also the doctor and the community that need training. What we need first of all is the point of view that it is impor-

tant to prevent illness in older children. When we come to consider what is important to be done with the older children we must remember that feeding is just as important as with the infant. It is therefore necessary for the nurse, or health visitor, or whatever she is called, to have proper instruction in the feeding of older children. I do not know why we have been so slow to realize that this has not been taught before, but it is the commonest thing in the world to find a nurse who is well trained in the care of infants and their food, giving the most surprising advice about the feeding of older children. We should recognize also the importance of the developmental defects. Posture is one of the most important. It is during the period when the child is beginning to walk until he gets to school that most of the postural defects begin to appear and become permanent unless they are corrected. The question of how to stand, the question of feet and hands and backs, should be settled during this period, if the best results are to be obtained. Then there are the dental defects which we are learning to recognize. It is important to take care of the first teeth and the nurse must know this, and know why it is so, and what care should be taken. We must see also that there are facilities in the community to give this care. Then there is the matter of other diseases of the mouth, adenoids, ears, eyes and tonsils. You won't get a uniform opinion from the medical profession as to whether the tonsils should come out or not, but you can follow the ideas of the men in the community in which you work, which is probably the best thing to be done under the circumstances.

Finally there is mental hygiene. Very few nurses and very few doctors take any recognition of the fact that by the time the child gets to school his disposition has been established and his mental habits fixed. Those are facts which we must consider. The public health relation of all of these things is covered in the school child, but we must realize that the work for the children from 2 to 6 years of age is not being done. There are undoubtedly other matters requiring attention, but those are just a few of the things that seem to me most urgent.

Preparation for Rural Work

Dr. Ellen C. Potter, Chief, Division of Child Hygiene, State Department of Health, Harrisburg, Pennsylvania: In our work in Pennsylvania the nurses and medical staff of the Child Health Division are trying to work out the rural problem together. Some of the nurses have had training in Public Health work and some have not. Under the former policy of the department their work was devoted entirely to tuberculosis; it now includes child welfare and venereal disease control. In order to minimize the effect of lack of public health training a group of fifteen were sent for an all too brief course to the School for Social Service in Philadelphia.

From their comments and my observation I should say that the training schools should put a larger amount of time on actual field work—in the prenatal centers, in the child health centers, in nutrition classes, in the follow-up work for child and mother in the home, than is the custom at present. They should of course, have a certain amount of theory in regard to

these matters but of even greater importance is the actual doing of the work in the centers and in the home visits. It is that "laboratory work" which gives them assurance to undertake the work back in their home station.

In my judgment there is relatively little need for these graduate nurses to undertake a large amount of field work in bedside nursing. What should be emphasized in the nurses training school and in the post-graduate work (and this is true for doctors as well) is the importance of exemplifying in their own bodies and habits and dress, standards of health. A physically fit body, proper health habits and a style of dress compatible with health will go a very long way in "putting across" the personal health idea in any community. Definite instruction along these lines with personal application and pedagogic method, to enable the person in training to pass the instruction on to others, will be an invaluable addition to any public health course of training.

Mrs. Jean T. Dillon, Director, Division of Child Hygiene and Public Health, State Department of Health, Charleston, West Virginia: It seems to me there is a great lack in the preparation of many of our nurses for rural, pioneer work. The nurses being placed in these new fields must largely lay the foundation for public health work. Many of the nurses undertaking such responsibility have had no training or experience other than that received in cities, or in city staffs, and have very little idea, if any, of how to make use of the facilities at hand; how to use these people who are scattered over wide territory as helpers or how to make leaders of themselves—so many seem to feel they must do all the work themselves—an insurmountable task. I do not believe we are going to have public health nurses who can realize what the teachers, the medical profession, the married nurses, and others in their counties or rural communities can mean to their work until we can have rural training fields that will give them actual experience under supervision in the organization for, and development of, rural public health nursing programs.

Dr. Theresa Bannan, Director, Bureau of Child Hygiene, Syracuse, N. Y.: The whole thing, as I see it, is what I have in mind myself. The word "training" means weeding out our natural impulses and conforming to the rules. In the hospital it is the first requisite on entrance and when the nurse leaves the hospital she lacks initiative. She is afraid to act "upon her own." It takes some time for her to realize that she can act. The only way to do public health work is to do it. If she will go into the families and talk to them she will see the problem of the whole family with her intuitive powers and initiation. That is what I ask for the nurses. Go and do it. You can watch a man drive nails for twenty years, but you will never learn how unless you do it yourself.

Miss LaForge: May I speak of the training in public health schools of the rural nurse? I have had the opportunity of observing the work of the public health nurses in rural districts. In the majority of instances these nurses have been unable to make their city training meet rural conditions. That is a big problem which must be met in the training schools.

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HEALTH PLAYS

THE HEALTH FAIRY

The new method of teaching health to little children, was demonstrated by the Child Health Organization, at the opening general session, following the address of welcome by the Mayor of St. Louis, Hon. Henry Kiel; the response by Dr. Van Ingen, and the address by Mr. Herbert Hoover, reported in full on pages 23-28.

The stage was set in fairyland showing a tiny house of rose colored brick covered with vines and placed in a lovely garden. As the Health Fairy, Miss Anne Raymond fitted out of her house and waved her wand, she was listened to with absorbed attention by the group of boys and girls on the stage, to whom she told her story, and with equal fascination of the grownups in the audience.

Spellbound they listened as she told them the story of the fairy house; how the old witch Ignorance had burned the house to the ground; of her great grief; how the lovely bird whose name was Education had tried to comfort her with the words: "Keep up your courage Fairy, for I will tell you how to build your house anew. It can be done with the hands of children alone. Every time a child learns to eat the right food, a brick shall be added to your house, every time a child learns to sleep in the sweet fresh air, a shingle shall be put upon the roof. And every time a child learns to play and be happy a colored glass shall be added to the windows."

Then she told the children the Wonderful Secret—The Secret of Health and Happiness. She told how each one of them could build a wonderful house and as she told the story she imbued with magic the virtues of milk, green vegetables and fruit, sleep, fresh air and cleanliness.

A HEALTH PLAY

Preceding the regular program of the Session on School Age and Adolescence a health play was presented by children who had been brought in from a school forty miles away, to demonstrate one of the methods now being used to teach health in the public schools of Missouri. The play was explained by Mrs. Walter McNab Miller, of the Missouri State Tuberculosis Association, St. Louis, as follows:

As the main subject for consideration this afternoon is how to teach health, we present a health playlet by Modern Health Crusaders from a rural school in St. Louis County. The playlet was put on at our request through the courtesy of Mrs. Virginia Harriss, Crusade Director of St. Louis County, who has enrolled over five thousand children in this new health game in the first three months, and is the third arranged for a National Meeting by the Missouri Tuberculosis Association.

Over 300,000 children in 102 counties of the State are keeping the health chores of the Modern Health Crusade, and in forty counties the County Superintendents are giving credit in the regular school work for their performance; while the prospect another year, that the work will be made a part of the State course of study, is encouraging.

The theory of the Modern Health Crusade, that children learn by doing and that any method that arouses interest in the child is bound to succeed, is pedagogically sound, and educators everywhere are welcoming this vitalizing of physiology and hygiene and are recognizing the effects of the Crusade on the children in school, and noting the reaction on their homes as well.

The printed material is given free by the Missouri Tuberculosis Association, but the insignia which belongs to each step in progress, from Squire to Knight Banneret, are bought by the children or given by the Parent-Teachers Associations, or Health Committees of the Tuberculosis Association.

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REPORTS

**ELEVENTH ANNUAL MEETING
OF THE
AMERICAN CHILD HYGIENE ASSOCIATION
Formerly**

American Association for Study and Prevention of Infant Mortality.

The Eleventh Annual Meeting of the Association took place at St. Louis, October 11-13, 1920 under the presidency of Dr. Philip Van Ingen. The annual meetings of the Executive Committee and the Directors were held Monday morning, October 11; other meetings were held October 13. The incoming Executive Committee met for organization Wednesday afternoon, October 13.

Meeting Places and Exhibits

Through the courtesy of the Trustees of the Cathedral, and officers of the Public Library, the meetings were held in the Schuyler Memorial House and the Public Library. Exhibit material describing the work of the affiliated organizations and featuring the activities of the local organizations was displayed in the Public Library.

Sessions

The program was arranged by the following committees:—

Prenatal and Maternal Care
Infant Care
Pre-School Age
School Age and Adolescence
Vital and Social Statistics
Nursing and Social Work
Rural Health Problems
Divisions of Child Hygiene

The session on Infant Care was a joint one with the Central States Pediatric Society and was the opening session of the annual meeting of that Association.

The order was as follows:

Monday, October 11.

9:00 A. M. Annual meeting of Executive Committee.

10:00 A. M. Annual meeting of Board of Directors.

11:00 A. M. General session: Address by the President, Dr. Philip Van Ingen, New York City.

Reports of the Affiliated Societies.

2:00 P. M. Prenatal and Maternal Care. Chairman, Dr. Alice Weld Tallant, Philadelphia.

4:00 P. M. Vital and Social Statistics. Dr. H. L. K. Shaw, Albany, presiding.

8:30 P. M. General Session: Address of Welcome by the Mayor, Hon. Henry Kiel;—Response by the president Dr. Philip Van Ingen;—Address by the Hon. Herbert Hoover.

Play by the Health Fair.

Tuesday, October 12.

- 9:30 A. M. Annual business meeting.
- 10:00 A. M. Pre-school Age. Chairman, Dr. Frank C. Neff, Kansas City, Mo.
- 2:00 P. M. School Age and Adolescence. Chairman, Dr. Richard M. Smith, Boston.
- 4:00 P. M. Round Table Conference: Rural Health Problems. Dr. James A. Hayne, Columbia, S. C., presiding.
- 8:30 P. M. Round Table Conference: Divisions of Child Hygiene. Chairman, Dr. Anna E. Rude, Washington, D. C.

Wednesday, October 13.

- 9:00 A. M. Round Table Conference: Nursing and Social Work. Chairman, Miss Winifred Rand, R. N. Boston.
- 11:00 A. M. Infant Care. Joint session with Central States Pediatric Society. Chairman, Dr. E. J. Huenekens, Minneapolis.
- 1:00 P. M. Closing Business Session, Resolutions, Announcements.
- 2:30 P. M. Meeting for organization of incoming Executive Committee.

Extension Work

Special reference was made in the reports presented by the Director and Executive Secretary to the extension activities undertaken during the year, notably the inauguration of field work; the publication of the magazine "Mother and Child", and of the statistical statement of infant mortality rates formerly compiled and published by the New York Milk Committee. These reports are published in full.

Council for Co-ordination of Child Health Activities

Under the head of special business, the Chairman reported that in accordance with plans duly considered and approved by the Executive Committee, the organization of a Council for the Co-ordination of Child Health Activities had been effected. An office has been established in Washington and Mr. Courtenay Dinwiddie has been made Executive Secretary. The following organizations are represented in the Council:—

- American Child Hygiene Association
- American Red Cross
- Child Health Organization of America
- National Child Labor Committee
- National Organization for Public Health Nursing
- National Tuberculosis Association

A statement of the plans and activities of the Council to date was presented and, on motion duly seconded, the recommendation of the Executive Committee that Dr. Van Ingen and Dr. Bolt continue to represent the Association on the Council was approved.

Committees

On motion duly seconded and carried the following committees were appointed by the chair:

- Nominations: Dr. Henry F. Helmholz, Chicago, Chairman
Miss Edna L. Foley, Chicago
Dr. Howard Childs Carpenter, Philadelphia
Dr. L. T. Royster, Norfolk
- Resolutions: Dr. J. Gurney Taylor, Milwaukee, Chairman
Dr. T. B. Cooley, Detroit
Miss Sophie Nelson, Louisville

Election of Directors

The following Directors whose terms had expired were reelected for a period of five years:

Miss Minnie H Ahrens, Chicago
 Dr. William N. Bradley, Philadelphia
 Dr. Thomas B. Cooley, Detroit
 Dr. J. Gurney Taylor, Milwaukee
 Dr. J. Whitridge Williams, Baltimore

The following new Directors were elected for the periods indicated:
Five Years

Miss Mary Arnold, New York
 Dr. Adrien S. Bleyer, St. Louis
 Mrs. Ruth A. Dodd, Columbia, S. C.
 Dr. John A. Foote, Washington
 Mr. Herbert Hoover, New York
 Dr. S. Fosdick Jones, Denver
 Dr. J. B. Manning, Seattle
 Dr. Frank C. Neff, Kansas City, Mo.
 Miss Winifred Rand, Boston
 Dr. Ada Schweitzer, Indianapolis
 Dr. Ellen A. Stone, Providence
 Dr. Ethel Watters, San Francisco

Two Years (to fill vacancies left by the resignations of Dr. Richard A. Bolt and Miss Ellen C. Babbitt:)

Dr. Merrill E. Champion, Boston
 Dr. Anna E. Rude, Washington

Officers for 1920-1921

Dr. H. L. K. Shaw, Albany, President-elect was declared President for 1920-1921.

At the meeting of the Board of Directors Tuesday night, October 12, the following officers and Executive Committee were elected:

President-Elect 1922	Mr. Herbert Hoover, New York
Vice-Presidents:	Miss Minnie H. Ahrens, Chicago
	Mr. Sherman C. Kingsley, Cleveland
Secretary:	Dr. Henry F. Helmholz, Rochester, Minn.
Treasurer:	Mr. Austin McLanahan, Baltimore
General Director:	Dr. Richard A. Bolt, Baltimore
Asst. General Director and Executive Secretary:	Miss Gertrude B. Knipp, Baltimore

Executive Committee:

Dr. F. L. Adair, Minneapolis	Dr. Wm. Palmer Lucas, San Francisco
Miss Minnie H. Ahrens, Chicago	Mrs. Wm. Lowell Putnam, Boston
Dr. John A. Foote, Washington	Dr. Anna Rude, Washington
Dr. S. McC. Hamill, Philadelphia	Dr. Henry L. K. Shaw, Albany
Dr. Henry F. Helmholz, Rochester	Dr. Philip Van Ingen, New York
Mr. Herbert Hoover, New York	Dr. Borden S. Veeder, St. Louis
Mr. Sherman C. Kingsley, Cleveland	

Resolutions

The following resolutions were reported favorably by the committee and were unanimously adopted by the Association.

WHEREAS, Accurate and extensive information regarding deaths of infants under one month would be of great value but is not available, owing to the fact that few cities tabulate deaths at this age, and that the Census Bureau gives these figures only for cities of over 100,000, be it

RESOLVED, that the American Child Hygiene Association request the Census Bureau to tabulate and publish for cities of over 50,000 the same statistics of mortality at certain ages under one year as now are published for cities over 100,000 and

BE IT FURTHER RESOLVED, That this Association undertake a campaign to interest local health officers in tabulating deaths under one week and one month.

WHEREAS, The National Nursing Assn. and the American Red Cross have outlined a program which may be put into operation in the most effective way in every community through the formation of a Student Nurse Recruiting Committee, therefore be it

RESOLVED, That the American Child Hygiene Association place itself on record as endorsing the plan presented by the National Nursing Associations and the American Red Cross, and

BE IT FURTHER RESOLVED, That every delegate and representative attending the Eleventh Annual Meeting of the American Child Hygiene Association be urged to present this program to his or her community, or if the program has already been presented, that they render all assistance possible on every occasion towards stimulating interest in the Campaign for Recruiting Student Nurses.

WHEREAS, Fundamental Principles relating to Child Health, both physical and mental, should be known to every nurse, and

WHEREAS, Every well trained nurse should be able to recognize early symptoms of sickness in children, especially in communicable diseases, therefore be it

RESOLVED, That the Nursing and Social Work Committee also recommend that the members of the American Child Hygiene Association render all assistance possible to Training School Superintendents and Instructors of Nurses so that they may secure facilities for giving such instruction and practical experience in the care of the child.

WHEREAS, The Eleventh Annual Meeting has been one of marked success, be it

RESOLVED, That the thanks of the Association are hereby tendered to the Local Committee on Arrangements, the Chairman of the Committees, and to the Speakers who have contributed so largely to the success of the meeting.

ALSO, To the Trustees of the Public Library and the Management of the Schuyler Memorial Building for meeting quarters.

BE IT FURTHER RESOLVED, That an expression of appreciation for the skillful handling of our publicity be extended to the Committee and to the Press of St. Louis for the generous amount of space allotted at a time when space was at a premium.

The incoming President, Dr. H. L. K. Shaw, was introduced to the Association at the general session on Wednesday, October 13.

33 States, the District of Columbia, England and Canada were represented at the meeting. Announcement was made at the closing session that the twelfth annual meeting of the Association would be held in the fall of 1921 in New Haven.

REPORT OF THE GENERAL DIRECTOR

11th Annual Meeting, St. Louis, Missouri, October 11-13, 1920

It is a peculiar pleasure to have the privilege of presenting to the Association my first annual report as General Director in the city of my birth, where cluster so many pleasant childhood memories.

A Retrospect

I cannot claim that I was familiar with the happy circumstances contributing to the conception of our Association nor with the prenatal conditions under which it was formed. I became acquainted with the Association soon after its birth. By the lively signs noted at the Baltimore meeting in 1910 I already regarded it as a very likely child. I have followed with considerable interest, from year to year, the development of our Association, passing through its uncertain periods of infancy and childhood but steadily advancing with broadening influence and wider service. I can, therefore, understand and appreciate the concern with which the changing life of their child is viewed by those who have had the rearing of the Association nearest at heart.

The Association Approaches Adolescence

The American Child Hygiene Association has now reached the promising period of adolescence. Such periods of growth are fraught with grave responsibility, whether for good or ill. Our Association has gradually advanced to a position where it faces the necessity of either meeting the larger responsibilities and demands which a complex society place upon it or of marking time and eventually atrophying. With its enlarged program and extended activities it reaches out in cooperation with other organizations, to fulfill the promise of its progenitors and friends. No one at this time feels more than I the responsibility for careful guidance and nurture of our Association in this period of fine adjustments and larger growth.

Standards and a Forward Look

It is not, however, with the past of our Association that I am particularly concerned. I look more to present tasks and future activities. These are large enough to challenge our best efforts. No one can scan the contents of our Annual Transactions for the past eleven years without being impressed that they reflect the best thought and scientific procedure, not only in the study and prevention of infant mortality, but also in the development of a broad socio-medical program for the whole of infancy and childhood. As we have advanced from year to year we have met and discussed one new problem after another. Methods tested by our affiliated societies have been standardized and accepted by many communities as the basis upon which to build their child hygiene program. Although our Association has never enjoyed large means, nor had an adequate personnel to carry out all that it felt might have been done, it has, nevertheless, always insisted upon care-

ful, scientific investigation of child hygiene problems and the finding of practical methods of solution. As far as possible the office staff of the Association has tried to keep in personal touch with every member and affiliated organization and render all available help.

Full Rounded Program of Child Hygiene

Our Association has always emphasized that no one phase of child life could be isolated and treated as an entity. We have felt that child hygiene should be integrated with the larger health needs of the community. As the Association grew and assumed larger responsibilities it has ever kept in view the needs of the whole child all the way from prenatal life to adolescence, emphasizing, it is true, now one phase and now another. Although we have been able to discover a number of gaps in the present scheme of working out child hygiene—at the same time it has been painfully evident that much overlapping occurs—it has by no means obscured our vision. It is better to suffer from a mild degree of myopia with properly fitted glasses than to have a distorted vision from a megaloccephalia. By self-examination, by cooperation and coordination with other national organizations dealing with various phases of child life, we should seek to work out a full rounded program commensurate with present needs.

Stimuli to Growth

It was a great satisfaction to begin my new work under the happy auspices of an office routine well established, guided with devotion and the untiring efforts of an Executive Secretary, who has kept her hands steadily on the helm of the Association ever since its inception. It has been a source of infectious inspiration to come into contact with the enthusiasm and unflagging interest of our President in the growth of the Association. It has also been a stimulus to feel that I had an Executive Committee behind me in every move for the advancement of our Association. It has been worth all the effort expended to have received their unstinted and cordial cooperation in assisting me to work out the broad program which was outlined.

Extension Plans

At the Annual Meeting of the Association in October of last year at Asheville announcement of plans for the extension of our Association were outlined by Dr. S. Josephine Baker in her presidential address. These plans contemplated the appointment of a full-time General Director, a Director of Field Work and a Director of Publicity. Publication of a magazine was seriously discussed. An increase of working space and personnel was contemplated. These plans were called forth by the ever increasing demands from all parts of the country for reliable information regarding various phases of child welfare and requests for counsel and advice in various localities to help and suggest plans for local activities. The carrying out of this program was contingent upon raising a budget of \$50,000 for the year.

How Our Budget Was Provided This Year

The stimulus to increasing our budget was provided through the American Red Cross which made an appropriation of \$20,000 towards our extension work with the proviso that the Association raise an equal amount for the same purpose. It was felt that there would have to be a strong effort to secure a large number of new members in order to extend the influence of the Association and to assist in meeting the budget requirements. It is very gratifying to report that all of these plans have in large measure been carried out and that we are within sight of the \$50,000 allotted for this year's work, although we may have to adjust our spectacles at times to see it.

Physical Expansion

It was very evident that the Association headquarters would have to be enlarged in order to meet the increased demands. The necessity for time and labor saving office devices presented itself. During the year we have accordingly added another large room to our office space at 1211 Cathedral Street and a room on the ground floor at the corner of Cathedral and Biddle Streets. This latter room is being used largely for the mechanical provisions of addressing and sending out our magazine and other Association material. Through the generosity of the New York Milk Committee we acquired a multigraph machine and a quantity of cards and paper. The necessary equipment for fitting out these rooms has amounted to a considerable initial expense but it has been amply justified by the increased efficiency of our staff and the large amount of work turned out. Details as to the total amount of correspondence and other work carried on in the offices will be given by our Executive Secretary.

Initiation of the General Director

I had the privilege of initiating my new work with the Association in Oakland, California, where I had been assisting in the development of the Public Health Center of Alameda County. On account of my intimate knowledge of local conditions it was quite easy to get in touch with those working along child welfare lines and present to them the aims and activities of our Association. It was also of great value to obtain their point of view and secure from our Directors on the Pacific Coast an expression of their opinion regarding the possibility of our expansion there. A number of conferences were held both with individuals and groups who were working in child welfare around the San Francisco Bay region. The feeling was expressed by several that we should have a Pacific Coast Section of our Association.

High Lights Across the Continent

On the way across the continent I made it a point to stop off at St. Louis, Chicago, Detroit and Cleveland in order to get in touch with our Directors in those localities and secure suggestions from them. In each city a lively interest was manifested in child hygiene work. It was felt that the member-

ship of our Association in those places could be greatly increased by intensive work. In Cleveland I was invited by Dr. Haven Emerson to meet with a group of those interested in child welfare in connection with the Health and Hospital Survey which he was directing. Later our former President, Dr. S. Josephine Baker, went to Cleveland and summed up the whole situation in a telling survey and report.

Cooperation With Other National Organizations

Upon arriving at our Association headquarters I was impressed with the necessity of at once getting in touch with other national organizations dealing with some phase of child welfare. A casual acquaintance with national organizations carrying on any phase of child welfare leads one to the direct conclusion that there is a considerable amount of overlapping of effort and a consequent waste of energy. An intimate knowledge of what they are attempting forces one to the conclusion that not only is cooperation vitally necessary but that cordination of effort and mutual understanding is imperative. I have, therefore, felt from the first that an important part of my work was to keep in touch with other organizations. Accordingly I took steps to find out what the programs of every organization claiming to be national in scope provided for in the way of child welfare, and how these were actually being worked out. This was carried on largely through correspondence from our office, which assumed voluminous proportions before the work was completed. It is to the untiring effort of my secretary that a large proportion of the correspondence was carried on. She is largely responsible for the final compilation of the Digest. I also took occasion to have personal conferences with executives of other organizations when it was found practicable.

A Digest of Programs of National Organizations Doing Child Welfare

Our first inquiry was sent to 65 organizations which we found were carrying on some phase of child welfare. Gradually the number of organizations brought to our attention increased to 90. We received approximately 80 replies which were complete enough to give us the desired information and from these we culled out 67 which fulfilled the requirements of national organizations having a definite program, some phase of which was devoted to child welfare. A Digest of all these programs was made and submitted to each organization for correction and approval. A large amount of correspondence was carried on by our office to check up the replies. This finally led to the compilation of a complete Digest, 125 copies of which were struck off on our multigraph for distribution to those interested.

We have already received a considerable number of acknowledgments stating how much the Digest was appreciated and how helpful it was to each organization. We are hoping to keep the data up to date and add other organizations as they come to our attention.

Preliminary Steps To Form a Council For Child Health

In the compilation of this data I was very much impressed with the necessity of getting together those organizations dealing largely with the health problems of the child. The desirability of forming a council to assist in coordinating the work of national organizations was brought home to me from a study of the Report of the Medical Conference of the League of Red Cross Societies at Cannes. The idea of a similar Council had emerged from the Conference and had already been brought to the attention of Dr. Livingston Farrand by Dr. L. Emmett Holt. This same conception had been carried in the minds of the British delegates to the Cannes Conference and on their return home they at once took steps to bring together some 14 organizations in Great Britain dealing with child welfare into a national council for child welfare. This Council was largely financed by the British Red Cross.

Preliminary steps had already been taken in the United States to bring together a number of national groups interested in the general health problems, but the child welfare side per se had not been touched.

Council For Coordinating Child Health Activities

A number of conferences were held with Drs. Farrand, Van Ingen, Holt, and Peterson, Miss Sally Lucas Jean, Miss Ella Philipps Crandall, and Mr. Owen Lovejoy with a view to interesting the Red Cross in calling a preliminary meeting to consider the advisability of forming a similar child health council in the United States. On March 4, 1920, Dr. Farrand called at the Red Cross Headquarters in New York an informal conference of representatives from five of the national organizations having well worked out programs dealing with some phase of child welfare to consider the advisability of forming a national council for the coordination of child health activities. A number of meetings were held in New York, two representatives from each organization being present to promote free discussion and formulate a plan acceptable to all. A permanent organization was finally effected, and Dr. Farrand was selected as Chairman and myself as Secretary-Treasurer of the Council. It was felt that in order to ensure permanence and carry out the objects of the Council it would be necessary to have a full-time Executive Secretary. This was made possible through the American Red Cross. Headquarters in Washington were provided and also salary for a full-time Executive Secretary. The Council is to be congratulated upon securing such an able man as Mr. Courtenay Dinwiddie who has had considerable experience in socio-medical work in various parts of the country. A formal notice of the organization of the Council for Coordinating Child Health Activities will be found in the August issue of our magazine, "Mother and Child," page 90.

Meetings Attended

In order that the Association might be kept in close touch with other national organizations holding annual meetings, it was decided by the

Executive Committee that I should represent the Association at the following:

1. *National Conference of Social Work, in New Orleans.* I had the pleasure of presiding at one of the meetings of the Section on Health and was chosen Chairman of the Section for the ensuing year.
2. *American Medical Association in New Orleans.* I attended sections on the Diseases of Children. Teachers of Pediatrics and Medical Editors. Read a paper before the Section of Medical Editors.
3. *American School Hygiene Association in Cleveland.*
4. *Superintendents of the National Education Association in Cleveland.* Represented Dr. Shaw on the Joint Committee from the A. M. A. and N. E. A. on School Health Problems.
5. *Conference on Community Organization in Washington, D. C.*
6. Met with the *Child Welfare Chairman of the League of Women Voters at Chicago*, a group of people interested in a national committee for child welfare legislation. Spoke of the necessity for maintaining a strong section for child welfare in the League for Women Voters and suggested appeals to all political parties to include planks on maternity and child welfare.
7. *American Pediatric Society in Highland Park, Ill.*
8. *State and Provincial Health Officers in Washington.*
9. *Conference on Coordination of Social Work at Washington.*

I also attended the meeting of the *American Nursing Organizations in Atlanta*, where I gave an address before the Section on Rural Nursing and had conferences with nurses from many parts of the country.

At each of these I had a splendid opportunity of meeting those who were particularly interested in child welfare and of discussing with them our enlarged program. Contacts formed at these meetings have made it easy throughout the year to stimulate interest in the localities represented by these people.

Conferences at Large

During the year I have also responded to invitations to confer and discuss child welfare plans with the following:

1. Secretary of the State Board of Health in Atlanta, Georgia.
2. Executive Secretary of the Maine Public Health Association.
3. The Directors and workers of the Washington Child Welfare Society.
4. Executive Secretary and others interested in the New Orleans Child Welfare Association.
5. The Director and members of his staff of the New York Charities Aid Association.
6. The Secretary of the State Board of Health and Director of the Bureau of Child Hygiene of the State of California.
7. The Director of the Elizabeth McCormick Memorial Fund in Chicago.

8. Director of the Cleveland Welfare Federation.
9. At the invitation of Dr. Haven Emerson with a group of people interested in child hygiene in the city of Cleveland in connection with the Health and Hospital Survey.
10. The Public Health Nurse Section of the Chicago School of Civics and Philanthropy, giving two addresses before the nurses of the School and one address before the Chicago Infant Welfare Association nurses.
11. Director of the School of Education in Cleveland in connection with his plans for a summer institute.
12. Conference with Dr. Borden Veeder of St. Louis and study of their Health Centers.
13. Conference with our Directors and members in Detroit in a study of their methods of child welfare.
14. Numerous conferences with members of our Executive Committee in helping shape the policy of the Association.

I have had three invitations to other States to confer on child welfare namely, Nebraska, Utah and Arizona, which I was unable to meet. It is felt that the personal contacts established this year have greatly assisted in increasing the number of affiliated societies and in extending the knowledge of the work of our Association.

In the city of Cleveland we were able to interest the Cleveland Welfare Federation to the extent that they donated \$1,000 from their Community Fund. This, it was understood, would cover in affiliated membership all the constituent organizations of the Federation carrying on some phase of child welfare.

Summer Courses in Child Welfare at University of California

Before accepting the position of General Director, I had obligated myself to give two courses in child welfare at the University of California Summer Session. As considerable interest had been aroused in California during the Children's Year, and a new Bureau of Child Hygiene had recently been established under the State Board of Health, I felt that this would be an excellent opportunity to extend the educational work in child hygiene for which our Association has always stood. The prestige of the University would make it possible to spread the information and at the same time would keep us in closer touch with our members on the Pacific Coast, and our affiliated societies there. I accordingly went to Berkeley this summer and gave one course on the general development of child welfare and the other on school hygiene. The courses were well attended by nurses, social workers, teachers, and physical training workers from many parts of the West, 14 western states being represented on my class roll, with 100 students in all.

The fruitage of my summer's work is already beginning to show. A number of appreciative letters have been received from the students and in a number of instances membership in the Association has been taken out. One school superintendent sent us a list of a dozen names in his district whom he thought could be interested.

The honorarium given by the University of California for my summer work fully met all expenses to and from California. While in California I took the opportunity to have conferences with the Secretary of the State Board of Health and the Director of the Bureau of Child Hygiene. It seems to me that one of the functions of our Association should be to develop closer relations with our universities and to offer them all possible help in the training of their health officers, nurses, educators, and social workers along child hygiene lines.

Program for Child Hygiene Section of American Public Health Association

Before I came into the Association as General Director, I had been asked by Dr. Julius Levy of Newark, New Jersey, to act as Chairman of the Section on Child Hygiene of the American Public Health Association and to arrange for their program at the meeting in San Francisco, September 13-17, 1920. Initial steps were taken while in California to provide a program. This was continued and completed when I came into my office in Baltimore. A considerable amount of correspondence was necessitated in this work but it brought me into such intimate contact with leading workers in child hygiene in all parts of the country that I felt amply repaid for all my efforts.

It was deemed necessary that I return to my office before the meeting in San Francisco, but I left the entire charge of the session in the hands of Dr. William Palmer Lucas. He reported the following: "We had two very good section meetings alone and one with the Vital Statistics Section. They were all well attended, between 60 and 100 at each meeting. The discussions were also very good." In the work of arranging for this program during the year it has been possible to smooth out a good many difficulties and to establish a most cordial relationship between our Association and the American Public Health Association.

Keeping in Touch With Our Directors

During the year the Executive Committee have held regular meetings at which a lively interest in the Association was shown and a large amount of work has been done by them in shaping the policy of the Association and in assisting in carrying it forward. Minutes of all the meetings of the Executive Committee together with notes regarding the formation of the Council for Coordinating Child Health Activities were sent to all the Directors immediately after each meeting. We have tried to keep in as close touch with Directors as possible and to keep them fully informed as to the developments of the Association.

The Membership Campaign

A most commendable effort to increase the membership of the Association has been sustained under the guidance of Dr. Van Ingen and Dr. Howard Childs Carpenter. Although we have more than doubled our membership this year it is felt that the returns have not been commensurate with

the efforts put forth. It is most encouraging to note the addition of affiliated societies. If every Director could be made to feel his responsibility and consider it a duty to assist in enlarging our membership, it would only be a short time before we would enroll 10,000 members.

Cooperation With Government Bureaus

I have made it a point to become acquainted with the workings of the Government Bureaus dealing with any phase of child welfare and to come in touch with the representatives of these departments. It has been our lot to refer a large number of persons interested in child welfare to the Government Bureaus for information regarding the work they are carrying on.

Statistical Report on Infant Mortality

It is quite proper to call attention here to the Statistical Report of Infant Mortality in 269 cities of the United States which was issued in the name of the Association. An immense amount of work connected with its compilation fell upon the shoulders of our President, Dr. Van Ingen. Inquiries were sent out to over 500 cities and much follow-up work had to be done on many of them. The chart has been widely distributed to health officers, mayors, and members of our Association. It has been syndicated by the International News Service and the Associated Press. We have received a large number of letters in regard to the chart commending its usefulness and a number of the newspapers throughout the country have featured it in one way or another. It is felt that this is a very valuable method in the way of education and publicity and should be undertaken by the Association each year.

Cultivation of Field Work

The extension of the field work of the Association, as initiated by Miss Harriet L. Leete, R.N., has been a pioneer effort for the Association. Miss Leete has succeeded in a relatively short time in familiarizing herself with the general child welfare situation throughout the country and at the same time has been carrying on an intensive study in certain fields. She has responded to invitations to the National Nurses Organization Meeting in Atlanta, the Mountain Workers Conference at Knoxville, Tennessee, conferences with nurses and health officers in North Carolina. She visited our affiliated societies in Charlotte, N. C., Hagerstown, Md., and Dallas, Texas. She conducted a very important piece of work in Chicago this summer in the Institute connected with the School of Civics and Philanthropy. She has also responded to invitations to visit Troy, New York, and Little Rock, Arkansas, where she gave a talk to nurses and held conferences with local and state health officers. Miss Leete visited Austin, Texas, getting in touch with the Division of Child Welfare there; Wichita, and Topeka, Kansas, familiarizing herself with the work of the Bureaus of Child Hygiene in those places. She has also been in touch with the child hygiene work in Indiana. I believe that the intimate touch which such field work promotes with the

Association, especially through our affiliated societies, is well worth cultivating. With the knowledge gained in this preliminary period it should mean that we follow a very definite constructive program for the ensuing year.

"Mother and Child"

Our new magazine, "Mother and Child," largely speaks for itself. It has meant a tremendous amount of work on the part of those directly interested in launching this endeavor. The untiring efforts of the Steering Committee and the Editorial Board and the collection of suitable material by Miss Ellen C. Babbitt deserve great praise. From the experience of the past three months and from a clearer definition of what the magazine should stand for we look to the future for a magazine which will answer all needs in this particular field.

The past year's work of the Association forces upon me certain conclusions:

First, the great interest manifested in all parts of the country in child welfare work and the demands which arise from all communities for authentic, up-to-date information along child welfare lines make it imperative that some organization fill the need.

Second, with the extension of our Association work and the reorganization of our staff to meet the larger needs it is perfectly possible for our Association to adjust itself to the increased demands and be of service where service is needed.

Third, with the present equipment and enlarged personnel of our Association we are in a position to serve a much larger membership than we have at present.

Fourth, there should be a concerted effort on the part of all interested in the Association, not only to build up its membership, but also to keep in direct touch with the Association so that they may realize its usefulness and command its services.

I desire to thank all those who have made the work of the Association this year so promising, and especially to express my deep appreciation of the untiring efforts of our President and Executive Secretary. We are looking forward to another pleasant and successful year for the Association.

Respectfully submitted,

RICHARD A. BOLT, M.D.,

General Director

Baltimore, Maryland, October 7, 1920.

REPORT OF THE EXECUTIVE SECRETARY

Some idea of the increased activities of the Executive Office during the past year may be gathered from the fact that over 45,000 pieces were included in the out-going mail, in contrast with 19,637 pieces in 1919 and 15,705 pieces in 1918. This included nearly 5,000 personal letters a large number of which were in response to inquiries for advice or information, and the figures given above do not include the records of extensive correspondence carried on at Washington in connection with the magazine. Neither do they include the records of personal correspondence while in the field of the Field Director.

In accordance with the plan that has been followed since the Association was started, and upon which much of the influence and prestige of the Association has been established, each inquiry has been individualized and effort has been made as far as possible to ascertain the individual conditions and needs, not simply to "reply" to the request by a perfunctory sending of printed matter.

Cooperation With Individual Organizations

The friendly cooperation that has characterized the relations of the Association with federal bureaus, notably the Children's Bureau, the Public Health Service, the Bureau of the Census, the Bureau of Education, the Department of Agriculture and other governmental departments and of the national organizations, including especially the central and regional offices of the American Red Cross, the National Organization for Public Health Nursing, the Child Health Organization, the American Public Health Association, the American Medical Association, the National Tuberculosis Association and the Southern Medical Association, have been continued and extended. Inquiries referring to fields covered by other organizations have been reported promptly to them and interlocking interests have been covered through the exchange of material and correspondence.

A most cordial welcome has been given to "Mother and Child" by other associations and publications. An instance of friendly cooperation and a pleasant reminder of the Asheville meeting, was shown in the publication in full, in recent numbers of the Journal of the Southern Medical Association, of the proceedings of the joint session on Rural Problems with that Association at Asheville last year.

Increased Office Facilities

The extension work described in detail in the report of the General Director, has required increased office personnel, office space and equipment. The single over-crowded room that has been occupied by the office for ten years had long since been inadequate for the demands of the work. An

adjoining room in the building in which the office had been situated, was secured and fitted up for the office of the General Director and an overflow office for the mailing department of the magazine and membership departments was secured in the immediate neighborhood.

The enlargement of the office was necessarily followed by the purchase of additional equipment and supplies, including power machines for multigraphing and addressographing. These proportionately large expenditures are listed in the financial statement under "supplies," but a close analysis of the figures will show that they are already beginning to yield substantial returns. For instance, a checking up of the multigraphing that has been done in the office with the cost of similar work from commercial concerns shows that in that one department alone over \$600 worth of work has been done on the office multigraph, indicating a saving not only of the same amount of money, but of time and convenience.

The clerical staff has been increased from two full-time and two part-time members to 7 full-time and 3 part-time for the Baltimore office and one full-time clerk for the magazine.

It is exceedingly difficult to give any idea of the amount of detail that has to be mastered by each member of the staff and the large output of clerical work would have been impossible if it were not for the loyalty, devotion, sense of individual responsibility and interest of every member of the staff.

Inquiries

The inquiries came from a wide range of sources, including college students, research workers, nurses, health officers, Red Cross Chapters, organizations and individuals interested in some phase of child hygiene and from lay people.

Material has also been asked for and has been sent abroad to China, New Zealand, Roumania and Czecho-Slovakia.

A rather significant feature of the inquiries is the number that have come from college students whose interest has been aroused in the possibilities of social service and preventive medicine; from nurses in training for, or specializing in, public health work, and from representatives of divisions of child hygiene. Another significant feature of the inquiries is the frequency of requests for information in regard to nutritional clinics or classes in connection with the care of children of pre-school age.

Publications

The most important publications of the year have been the Transactions of the Asheville meeting—Volume X in the series issued by the Association; the magazine "Mother and Child", and the statistical statement of infant mortality rates which was prepared by Dr. Van Ingen, and which has been sent to health officers statisticians and newspapers throughout the country. Eighteen hundred and fifty copies of the Transactions were published. In addition to the copies that were sent to members, a large number were ordered as usual by medical and general libraries for their reference departments.

Affiliated Societies

There has been frequent correspondence during the year with individual organizations in the affiliated group, while the entire affiliated membership has been kept in touch with the growth and plans of the Association by means of announcements and circular letters. (See also report on membership campaign.)

In connection with the plans of the St. Louis meeting, at the request of Dr. Veeder, Chairman of the Committee on Local Arrangements and Dr. Bleyer, Chairman of the Exhibit Committee, each affiliated organization was asked to prepare a poster or banner outlining briefly the most significant features of its work. Thirty-two of the societies responded to this request and have prepared posters, charts, etc., which will be on exhibition.

The affiliated societies were asked as usual for a report for the annual meeting and a suggested outline was sent to each society in August. One hundred of the organizations replied in some way to this correspondence and up to October 8, 60 had sent reports, and others promised to send them later.

Invitations to Governors and Health Officers

In preparation for the annual meeting letters signed by the General Director were sent to the Governors of all states and to the health officers of all cities of 10,000 or more population inviting them to be represented at the meeting. The Governors of 16 states responded by the appointment of delegates.

Membership Campaign

Eight hundred and twenty-nine new members and thirteen contributors were enrolled from February 21 to September 30 as a result of the membership campaign, which was started the latter part of February through a circular letter, signed by the President and the General Director, and sent to all of the affiliated societies except those connected with the departments of health and similar organizations, which would preclude appeals to associates or clients to join other organizations. A total of 158 affiliated societies were circularized, and approximately 30 replied by either furnishing lists, which could be circularized from the Baltimore office or by sending out the Association literature from their own offices.

The second step was in the form of a circular letter sent by the President, which was addressed to the Directors, and which asked their help in interesting individuals in their own communities. This was sent out the middle of April.

It was soon decided that more satisfactory results would follow the appointment of state chairmen. Dr. Carpenter accepted the chairmanship, and a carefully organized campaign was begun, utilizing as far as possible the chairmen with whom Dr. Carpenter had had correspondence in 1919 in connection with the committee on organization and extension. Twenty-three states and the District of Columbia were circularized during the campaign.

The Red Cross quotas for state memberships were used as a basis for the quota, which was assigned to each state. The supplies sent to each

chairman were coded, so that returns could be carefully checked up. The following have served as State Chairmen:

- "A"—Dr. H. L. K. Shaw, New York.
- "B"—Dr. Richard M. Smith, Massachusetts.
- "C"—Dr. Philip Van Ingen, New York City.
- "D"—Dr. S. McC. Hamill, Pennsylvania.
- "F"—Dr. Borden S. Veeder, Missouri.
- "G"—Dr. L. T. Royster, Virginia.
- "H"—Dr. M. L. Turner, Iowa.
- "J"—Dr. Joseph S. Wall, District of Columbia.
- "K"—Dr. F. L. Adair, Minnesota.
- "L"—Dr. James R. Garber, Alabama.
- "M"—Dr. Henry Enos Tuley, Kentucky.
- "N"—Dr. J. Gurney Taylor, Wisconsin.
- "O"—Dr. S. Fosdick Jones, Colorado.
- "P"—Dr. T. B. Cooley, Michigan.
- "Q"—Mr. Dudley V. Sutphin, Ohio.
- "R"—Dr. Wm. A. Mulherin, Georgia.
- "S"—Dr. J. H. M. Knox, Jr., Maryland.
- "T"—Dr. A. E. Schweitzer, Indiana.
- "U"—Dr. J. B. Manning, Washington.
- "V"—Dr. Julius Levy, New Jersey.
- "W"—Dr. Leroy A. Wilkes, Connecticut.
- "X"—Dr. Grace Whitford, Florida.
- "Y"—Miss Mary Railey, Louisiana.

At regular intervals, reports of returns were sent to each chairman, accompanied by a summary of the returns from all sources, so that each chairman was kept informed as to the progress of the campaign in other states as well as his own territory.

The total financial returns from the 829 new memberships amounted to \$4,297.65, and the gifts from the thirteen contributors amounted to \$9,801, making a total of \$14,098.65.

The above total does not include seventy-two Missouri memberships enrolled by the local committee, dues for which were received after the close of the fiscal year. -

Special letters were prepared and multigraphed in the office for the chairmen of the committee and for several of the state chairmen for use in connection with the Campaign.

Finances

Receipts—The total receipts from all sources during the year amounted to \$40,312.19. The balance on hand October 1, 1919, was \$1,492, making a total of \$41,804.19. Of the total receipts, \$8,062.25 were derived from membership dues; \$30,849.06 from contributions; \$753.20 from the sale of Transactions and the rest from miscellaneous sources. Of the contributions

\$20,000 came from the American Red Cross for extension work, \$7,500 from the Commonwealth Fund of New York City, \$1,000 each from two individuals, \$1,000 from the Cleveland Community Fund and the rest from miscellaneous sources.

Disbursements—The total disbursements amounted to \$35,471.49, leaving a balance on hand September 30, 1920 of \$6,332.70.

Membership

The total paid-up membership for the year ending September 30, 1920, was 1,232; in addition 503 advance payments for the year beginning October 1, 1920 were received shortly before the meeting, making a total of 1,686 payments for membership dues during the year ending September 30, 1920. As was shown in the section of the Membership Campaign 829 new members were enrolled from February 21 to September 30, as a result of the campaign.

What has always been regarded as the high water mark in membership was reached in 1916 with a total enrollment of 1,110 members. The above figures show that a new record has been set and that the losses during the years of the war have been more than offset by the gains in this last year. The total paid-up membership for the last five years has been as follows:

1916.....	1,110	1919.....	917
1917.....	1,034	1920.....	1,232
1918.....	935		

Detailed statements of finances, membership and clerical work follow.

AMERICAN CHILD HYGIENE ASSOCIATION

FINANCIAL STATEMENT

October 1, 1919—September 30, 1920

Balance on hand October 1, 1919..... \$1,492.00

Receipts—

Membership:

Active	\$4,520.46
Affiliated	805.00
Contributing	1,070.00
Sustaining	675.00
Life	1,000.00
	\$8,070.46

Contributions:

General	\$8,754.00
Extension Work	1,000.00
From Red Cross.....	20,000.00
Toward Membership Appeals.....	95.06
Cleveland Fund	1,000.00
	\$30,849.06

Transactions:

1910-1918	\$468.00
1919	285.20
	\$753.20

Exhibit	10.00
Interest on bank balances.....	183.29
Refund traveling expenses.....	54.57
Refund—Postage	13.56
Refund—American Multigraph Co.....	1.00
Sale of typewriter	20.00
Subscriptions to "Mother and Child".....	99.80
Sale of Circulars:	
14,900 Common Cold	\$48.89
9,650 Educational Leaflets	52.72
10,000 Motherhood	74.85
100 Sug. Baby Saving Work.....	.75
900 Prenatal Care Rec. Forms.....	7.50
1,600 Postnatal Care Rec. Forms.....	17.00
Reprints	63.75
	\$265.46

\$40,320.40

\$41,812.40

Disbursements—

Salaries	\$18,400.92
Multigraphing and Typewriting.....	79.51

Transactions:

Printing	\$1,440.00
Wrapping	27.50
Postage	113.55
	\$1,581.05

Printing:

Magazine and Reprints	\$2,668.38
General	1,925.57
	\$4,593.95

Postage	1,201.42
Office Supplies	3,160.52
Clerical Help	2,710.06
Rent	515.00
Telephone	152.64
Traveling Expenses	2,563.12
Exhibit	50.58
Expressage and Telegrams.....	72.66
Bank Collection Charges.....	8.21

FINANCIAL STATEMENT

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Miscellaneous:			
Advertising in Survey.....	\$54.00		
Wrapping and Folding.....	16.58		
Auditing Books	22.50		
Insurance—Transactions	6.00		
For exclusive use of "Mother and Child".....	50.00		
Repairs	86.00		
Water	6.90		
Ice	6.50		
Corporation Registration Fee and Tax.....	50.00		
Freight	15.87		
Janitor Service, Car Fare, etc.....	75.71		
		\$390.06	
			\$35,479.70
Balance on hand September 30, 1920.....			\$6,332.70

WILLIAM A. GILLESPIE & COMPANY
 Certified Public Accountants
 Union Trust Building
 Baltimore, Md.

Baltimore, Md., October 9, 1920

The American Child Hygiene Association,
 1211 Cathedral Street,
 Baltimore, Md.

Gentlemen:—In compliance with request of your Executive Committee, we have made an audit of the accounts of The American Child Hygiene Association for the period ending September 30, 1920, and have found same to be correct, as stated in the accompanying report.

Respectfully submitted,

(signed) WILLIAM A. GILLESPIE & CO.

AMERICAN CHILD HYGIENE ASSOCIATION

MEMBERSHIP, 1920

	Life Members 1910-1919	Advance for 1920	Paid during 1920 Arrears Current	Advance for 1921 Old Members	New Members
Alabama	..	..	5	1	1
Arizona	..	..	1	..	1
California	..	13	35	..	8
Colorado	..	..	22	..	21
Connecticut	..	..	21	..	18
Delaware	..	..	10	..	..
District of Columbia	..	..	26	..	3
Florida	..	1	..	..	..
Georgia	..	..	5	..	9
Idaho	..	..	..	..	1
Illinois	..	..	2 70	..	9
Indiana	..	..	9	..	9
Iowa	..	..	10	1	4
Kansas	..	..	3	..	..
Kentucky	..	1	12	..	..
Louisiana	..	..	30	2	3
Maine	..	..	4	..	..
Maryland	5	..	79	..	35
Massachusetts	1	..	80	..	52
Michigan	1	..	39	..	10
Minnesota	2	..	33	..	16
Missouri	1	..	27	..	69
Mississippi	..	..	2	..	1
Montana	..	..	1	..	..
Nebraska	..	..	3	..	3
New Hampshire	..	..	3	..	1
New Jersey	..	..	37	..	14
New Mexico	..	..	..	..	1
New York	2	..	241	4	44
North Carolina	..	..	6	..	2
North Dakota	..	..	..	..	2
Ohio	5	1	77	1	5
Oregon	..	..	3	..	2
Oklahoma	..	..	2	..	..
Pennsylvania	3	1	181	2	72
Rhode Island	1	1	8	..	..
South Carolina	..	..	3	..	1
South Dakota	..	..	1	..	1
Tennessee	..	..	2	..	1
Texas	..	..	4	..	5
Utah	..	..	2	..	1
Vermont	..	..	2	..	..
Virginia	..	..	13	1	35
Washington	..	..	4	..	12
West Virginia	..	..	4	..	2
Wisconsin	7	1	28	1	10
Wyoming	..	..	..	..	1
Canada	..	..	21	..	2
England	..	1	1	1	..
Hawaii	..	..	4	..	..
Philippine Islands	..	..	2	..	..
Panama	..	..	1	..	..
New Zealand	..	1	..	1	..
West Indies	..	..	1	..	1
	28	21	2	15*	438*
			1183*		
			21		
			28		

Total for 1920 Membership 1232

*Total payments during year ending September 30, 1920: 1183

15

488

1686

The above total does not include 72 Missouri memberships enrolled by the local committee, dues for which were received after the close of the fiscal year

MEMBERSHIP

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Membership, 1920

	Life members 1910-1919	Paid in advance in 1919 for 1920	Current payment 1920	Advance for 1921
Life members.....	28		5	
Sustaining members.....			13	12
Contributing members.....		7	75	32
Affiliated societies.....		1	142	18
Active members.....		13	948	441
	28	21	1183	593
			21	
			28	
Total			1232	

Amounts From Membership During Year ending September 30, 1920

		Arrears	Current	Advance
Active			\$3,093.84	\$1,426.62
Affiliated			715.00	90.00
Contributing			750.00	320.00
Sustaining		\$50.00	325.00	300.00
Life			1,000.00	
		\$50.00	\$5,883.84	\$2,136.62
Active.	\$3.00	Current		824
		Advance		390
Active	5.00	Current		124
		Advance		51
Affiliated	5.00	Current		142
		Advance		18
Contributing	10.00	Current		75
		Advance		32
Sustaining	25.00	Arrears		2
		Current		13
		Advance		12
Life	200.00	Advance		5
				1688
		Arrears		2
				1686

REPORT OF CLERICAL WORK

October 1, 1919 to September 30, 1920

Total Pieces of Mail.....		45,443
Personal Letters	4,743	
Circular Letters	5,563	
Bills and Receipts	2,335	
Packages	3,540	
Transactions	391	
Questionnaires	198	
Statistical Charts (Infant Mortality).....	1,901	
Digest of Programs of National Organizations.....	80	
Transaction Postals (1919 Report).....	1,505	
Magazine "Mother and Child":		
June Number	7,811	
August Number	5,681	
October Number	4,485	
	<hr/>	17,977
Preliminary Programs (1919 Meeting).....	3,934	
Final Programs (1919 Meeting).....	136	
Preliminary Programs (1920 Meeting).....	3,140	
	<hr/>	
Booklets:		
Through U. S. P. H.....	1,700	
Through Office		2,894
Leaflets No. 1:		
Through Orders	6,700	
Through Office		2,984
Motherhood Folders:		
Through Orders	5,300	
Through Office		2,356
Sug. O. B. S. W.:		
Through Orders	100	
Through Office		1,403
Common Cold:		
Through Orders	9,400	
Through Office		2,811
Prenatal Care Record Forms:		
Through Orders	425	
Through Office		1,057
Postnatal Care Record Forms:		
Through Orders	1,625	
Through Office		1,005
Prenatal Care Committee Reports.....		106
Rec. (Infant Care)		934
Transaction Slips (1918 Report).....		533
Eugenic Reprints		10
Membership Campaign:		
Membership Circulars	19,517	
Membership Cards	18,561	
Reply Envelopes	20,153	
Stamped Envelopes	2,872	
Unstamped Envelopes	1,975	
Letterheads	3,165	
Slips, Re Annual Meeting	6,708	
Slips, Re Extension	7,294	

Respectfully submitted,

HEBETUDE B. KNIPP,

Executive Secretary

REPORTS OF AFFILIATED SOCIETIES

AMERICAN CHILD HYGIENE ASSOCIATION

(formerly the)

AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY.

Reports of Affiliated Societies for Year Ending September 30, 1920

Reports were asked of the Affiliated Societies in accordance with Article X of the By-laws. The outline given below was intended to be suggestive only and the societies were asked to include brief descriptions of distinctive features of their work in their reports. Unless otherwise indicated, the statistics are for the year ending September 30, 1920.

The reports which follow give some idea of the trend of the activities in the sections represented. The marginal figures in the reports refer to corresponding ones in the outline.

Suggested Outline for Reports

Name and address of organization

When organized

I. Federal State Municipal Private

A. Board of Trustees:

(1) Number of men

(2) Number of women

B. Auxiliary Board:

II. Scope of work:

III. Staff.

A. Nurses:

(1) Number of supervisors

(2) Number of field workers

B. Doctors:

(1) Number on full time

(2) Number on part time

(3) Number on free service

Numbers of hours

Number of hours

C. Dentists:

(1) Number on full time

(2) Number on part time

(3) Number on free service

Number of hours

Number of hours

D. Social Workers:

(1) Trained

(2) Volunteers

E. Dietitians:

(1) Number on full time

(2) Number on part time

F. Volunteers:

(1) Number

(2) Number of regular hours

G. Clerical Assistants:

IV. Divisions of Work.

If Divisions have special service indicate by S.

If a part of a Health Center indicate by H. C.

A. Prenatal:

- (1) Number of weekly clinics with obstetricians in charge
- (2) Number of nurses doing
 - (a) Clinical work
 - (b) Field work
 - (c) Supervisors
 - (d) Number on full time
 - (e) Number on part timeNumber of hours
- (3) Directed by
 - (a) Child Hygiene Division
 - (b) Maternity Hospital
 - (c) Visiting Nurse Association

B. Maternal:

- (1) Number of deliveries by obstetricians
 - (a) In hospital
 - (b) In out-patient's service
 - (c) In patient's home
- (2) Number of deliveries by midwives

C. Infant Care (under 1 year):

- (1) Number of centers at which clinics or conferences are held
- (2) Total number of weekly conferences or clinics
 - (a) Preventive consultations
 - (b) Clinics for sick babies
 - (c) Combination for clinics for sick and well infants
 - (d) Percentage of breast fed babies under six months on your roll

D. Pre-school Age (1-6 years):

- (1) Total number of weekly clinics or conferences
 - (a) Preventive consultations
 - (b) Clinics for sick children
 - (c) Clinics for both sick and well children
 - (d) Number of nutritional classes separate from the clinics
 - (e) Nutritional classes affiliated with children's clinics
 - (1) Same hour
 - (2) Separate time
- (2) Is the mental health of the child given especial consideration at this age?
In what manner?

E. School Age and Adolescence:

- (1) Have you medical inspection in your schools
 - (a) How many full time medical officers
 - (b) How many part time medical officers
 - (c) How many school nurses
 - (1) Average time (weekly) given to school inspection
 - (2) Average time (weekly) given to home visiting
 - (3) Duties of school nurses during summer months

- (2) Have you health development classes
 - (a) Under supervision of teachers
 - (b) Under supervision of medical officers
 - (c) Under supervision of nurses
- (3) How are your Medical Inspection, Health Development and Physical Education Departments co-ordinated?
- (4) Defects corrected during the year 1919
- (5) Please state nature and frequency of mental tests made

F. Nutritional Classes:

- (1) Number of weekly classes for school children
- (2) Number of weekly classes for pre-school children
- (3) Conducted by whom:
 - (a) Physician
 - (b) Nurse
 - (c) Dietitian
- (4) Method:
 - (a) Is class method used
 - (b) Is individual method used
- (5) State average weekly number of home visits
 - (a) By nurses
 - (b) By dietitians

G. Communicable disease control, including tuberculosis and venereal diseases:

- (1) What is your city or town doing towards the control of communicable diseases?
- (2) What communicable diseases are
 - (a) Reported
 - (b) Isolated
 - (c) Quarantined
 - (d) By whom is quarantine controlled
 - (e) By whom is quarantine lifted
- (3) Are quarantined cases cared for by nurses
 - (a) By special nurses
 - (b) By general group nurses
- (4) Are Wassermann and luetin tests given routinely
 - (a) At what ages
 - (b) Are positive reactions followed by routine treatment

H. Are your activities limited to your own city or town

I. If you direct county or state work in connection with the work of your local organization, please describe extension work

J. Have you a mobile unit in service

Care of dependent children:

- (1) Have you a boarding-out system
 - (a) Number of homes supervised
 - (b) Average number of children in each home at one time

L. Illegitimate children:

- (1) Have you made an especial study of the health and environment of the children born of unmarried parents
- (2) What action has been taken to improve such conditions?

V. Financial.

- A. Total budget for the current fiscal year:
- B. How is your organization supported?
 - (1) By membership dues
 - (2) By appropriation from city or state
 - (3) By special contributions
 - (4) Through a community chest
- C. What method or methods have you found most successful in raising funds?
- D. Is the work that is being done by your association given free of charge or do you ask a fee
 - (1) Amount of fee if one is asked?

VI. Co-operating Agencies:

- A. Does your town, city or county have a Children's Council
- B. What is the nature of cooperation between your organization and other groups interested in child life?
 - (1) State
 - (a) Department of Health
 - (b) University
 - (2) City Department of Health
 - (3) Hospitals
 - (4) Medical schools
 - (5) Relief organizations
 - (6) Private groups
 - (7) Nursing groups
 - (a) Undergraduates
 - (b) Postgraduates

VII. Have you a division of Child Hygiene in your state

VIII. Have you a division of Child Hygiene in your city

IX. Is your city zoned into health districts

- A. Number of districts
- B. Population of city

X. Improvements observed as a result of activities of previous year:

- A. Improved health among children
- B. Lessening of communicable diseases
- C. Increased intelligent care on the part of fathers and mothers
- D. Wider community interest in the health of children, as manifested by
 - (1) Increase in number of clinics or classes
 - (2) Increase in medical and nursing care
 - (3) Increase in budget for care of children
 - (4) Decrease in
 - (a) Infant mortality rate
 - (b) Death rate of children
 - (5) Decrease in morbidity rates
 - (a) Infant
 - (b) Children from 1-6

XI. Statistical:

A Prenatal Care:

- (1) Total number of mothers cared for during the year
- (2) Average number of months under care

- (3) Total deaths of mothers
 - (a) During pregnancy
 - (b) At childbirth
 - (c) During the puerperium
- (4) Total number of infant deaths
 - (a) At birth
 - (b) During the first month
- (5) During what month of pregnancy do the women come under your care
 - (a) Average cases
 - (b) Earliest cases
- B. Postnatal Care. Infant care. Pre-school age and older children.
 - (1) Age limit of babies or young children under care
 - (2) Total number under one year cared for
 - (3) Total number between 1 and 6 years cared for
 - (4)
 - (5) What percentage of babies born in your city or town during the current calendar year or during your current fiscal year are under the supervision of your organization
 - (6) What percentage of the babies born within the preceding year, in the districts covered by your organization, have come under the supervision of your association
 - (7) Total attendance during the year at consultations or clinics
 - (a) Under 1 year
 - (b) From 1-6 years.
- C. Total births in your city or town for year ending Dec. 31, 1919:
- D. Total deaths under 1 year:
 - (1) In your city or town for year ending Dec. 31, 1919
 - (2) Among the infants under your care
- E. Total deaths among children from 1-6 years:
 - (1) In your city or town for year ending Dec. 31, 1919
 - (2) Among the children under your care

XII. Record System:

- A. Have you a continuous record of child, including prenatal care and extending through school age period
 - (1) Does your record indicate
 - (a) Defects remedied
 - (b) Character of feeding
 - (c) Environmental surroundings controlled
 - (2) Do you use
 - (a) A national record form
 - (b) One of your own

Please send copies of record forms with your report.

XIII. Public Health Education:

Have you a wide awake public health education committee, which is putting across to the community health facts, which will enable all children to secure their right to intelligent care and healthful surroundings?

XIV. Supplemental Statement

REPORTS

CANADA

Province of Ontario

BABIES' DISPENSARY GUILD, Inc.

Hamilton

I. Organized 1911.

A private organization, governed by a board of fifty-three trustees.

III. Staff: Nurses, 1 supervisor, 3 field workers.

Doctors, on free service, 14 give one to two hours weekly.

Volunteers, 6 give from two to three hours weekly.

Clerical assistants, 1.

IV. Divisions of Work:

Prenatal: Nurses visit homes and give instructions to expectant mothers.

Infant Care: Number of centers, 4; total weekly conferences, 8; 24 per cent of the babies on the roll are breast fed.

School Age and Adolescence: Number of school nurses, 4 on full time. During the summer months these nurses attend special courses at the University of Toronto.

Communicable Disease Control: Communicable diseases are reported in accordance with the Provincial Board of Health. Quarantine is controlled by the Medical Officer of Health. Cases are visited by the nurse who makes her report directly to the Medical Officer of Health. Wassermann and luetin tests are given routinely twice a week. Positive reactions are followed by routine treatment at the clinic in the City Hospital.

V. The total budget for the current fiscal year is \$5,239.52. The Guild is supported by membership dues, special contributions and an appropriation from the city. All work done by the Guild is free of charge.

VII. There is a Division of Child Hygiene in the Province.

VIII. There is no Division of Child Hygiene in Hamilton.

IX. City is zoned into five health districts for sanitary inspection work. Population 110,000.

XI. Statistical, for year ending December 31, 1919:

Postnatal Care: Age limit of babies under care, 2 years. 15 per cent of babies born during the year under care of the Guild. Total attendance at clinics, under 2 years, 4,653.

Total births in Hamilton, 2,818. Total deaths, under 1 year, 416. Among babies under care of the Guild, 7 under 2 years. Total deaths among children from 1 to 6, 76.

XIV. The most significant work during the year was the enthusiastic campaign for funds for a new central building, in which over \$30,000 was realized. The first step toward the erection of the building has been taken in the purchase of a property near the City Hospital and we hope soon to see the building begun.

While our methods remain unchanged and our budget has not increased we are gratified to note our average daily attendance at clinics has almost doubled, making it necessary to establish another clinic at our central depot and to open a branch in a district heretofore almost untouched, also making necessary the employment of another full time nurse.

HELEN HULME, R. N., *Supervising Nurse*

DIVISION OF MATERNAL AND CHILD WELFARE, PROVINCIAL BOARD OF HEALTH

Toronto

I. Organized 1916.

III. Staff: Nurses, 1 supervisor, 9 field workers; doctors, one full time; free service, one consultant pediatricist.

IV. Divisions of work: The activities are limited to the Province of Ontario. The division has under construction a child welfare motor truck. The truck is fitted up with a first-class consulting room with dressing room at each end. The staff consists of a physician, nurse and mechanic, who also operates the picture machine.

V. The total budget for the current fiscal year is \$40,000. The organization is supported by an appropriation from the Province. The work done by the division is given free of charge.

XI. Statistical for the year ending December 31, 1919: Total births in the Province, 64,729; total deaths under 1 year, 6,402; total deaths among children from 1 to 5 years, 8,990.

XII. Record system: The Division has formulated its own record system.

XIII. Public Health Education: A public health education expert was appointed to the Provincial Board of Health August, 1920.

MARY POWER, *Director*

Province of Quebec

BABY WELFARE COMMITTEE

Montreal

I. Founded and incorporated in 1917. The committee is composed of about 175 individuals and organizations actively engaged in infant work and child conservation in Montreal and elsewhere in Canada.

The committee cooperates actively with the various federal, provincial and municipal health departments, and with national and international health organizations.

W. A. L. STYLES, M. D., *Executive Secretary*

CANADIAN PATRIOTIC FUND

Montreal

This organization was established for relief giving purposes, and the work for children is incidental. Locally, however, the work for children along health lines has been made an important feature. A children's clinic has been established, which is held two afternoons a week, and in connection with which two nurses are doing follow up work in the homes and in the hospitals, the only restriction being that they are children of ex-soldiers. A study is being made of the defects found in the first thousand children examined in the health clinic.

Two other local funds are starting a children's health clinic along the lines inaugurated by this organization.

HELEN R. Y. REID, *Convener of Auxiliary*

Nova Scotia

MASSACHUSETTS HALIFAX HEALTH COMMISSION

Halifax

1. Organized May, 1919. Governed by a board of nine trustees, and a consulting board of six.

II. Scope of work: The aim is the development of an ideal public health campaign for community at an expenditure of \$1.00 per capita per annum.

III. Staff: Nurses, 2 supervisors, 5 field workers; doctors, full time, two, part time, four; number on free service, four. Clerical assistants, two.

IV. Divisions of work:

Prenatal: Number of weekly clinics, two.

Infant Care: Number of centers, two.

The Red Cross has a mobile unit.

V. The total budget for the current fiscal year, \$75,000. The organization is supported by an appropriation of \$5,000 each from the city and Province; \$15,000 from the Dominion, and a special contribution of \$50,000. The work done by the commission is free of charge.

B. FRANKLIN ROYER, M. D., *Executive Officer*

CALIFORNIA

BABY HYGIENE COMMITTEE OF THE ASSOCIATION OF COLLEGIATE ALUMNAE

San Francisco

I and II. The Baby Hygiene Committee was organized at the Certified Milk Fund Committee of the Association of Collegiate Alumnae, in June, 1909, to reduce the infant mortality among dependent children, by Mrs. A. E. Graupner. They supplied certified milk to the dependent babies boarded out by the Associated Charities and in the Children's Hospital, and in the Florence Crittendon Home. In August, 1909, some of the committee members assisted in the friendly visiting of the foster mothers under the Associated Charities which had brought the infant mortality rate (formerly 59 per cent among babies in asylums 1907-1908) to 12 per cent in 1908-1909. In November, 1909, three doctors were given supervision of the feeding of the Associated Charities foster babies, the committee visitors to call upon the older children. In December, 1909, a regular feeding clinic was started under these three pediatricians for the foster children. In June, 1910, the name of the committee was changed to Certified Milk and Baby Hygiene Committee of Association of Collegiate Alumnae. As early as 1911 the educational purpose was expressed in the by-laws "to organize centers for the instruction of mothers in the proper hygienic care of their children," and in 1912 circulars were sent out explaining the necessity for birth registration. The committee continued active in watching the milk situation and pushed legislation for pasteurization. In 1916 the committee succeeded in getting the Board of Health to create the position of a nurse to investigate homes where babies were boarded outside of Associated Charities supervision. In October, 1917, the committee rented a house, the Children's Health Center, where the weekly nutritional conference for the foster babies has been subsequently housed, and one well-baby feeding conference started. In November, 1917, the name of the committee was changed to Baby Hygiene Committee of A. C. A. In 1918 the health center was given over to the Children's Year examination. In 1919 prenatal lectures were begun and in February, 1920, another day for feeding conferences was added to the schedule. In September, 1920, a postural group was started for children of pre-school age. The Visitation Valley Health Center was opened by one of the advisory council, a committee member, and a nurse of the Board of Health. During the year also, two other health centers have been opened in isolated districts under the Board of Health with the cooperation of the Baby Hygiene Committee.

The Baby Hygiene Committee is made up of fifteen members, all college graduates, and an advisory council of A. C. A. doctors who work at the feeding conferences.

The weekly activities at the Children's Health Center, 323 Haight Street, are: Tuesday P. M., postural class; Wednesday and Thursday A. M., well-baby feeding conferences; Thursday P. M., prenatal talks; Friday A. M., feeding conferences for foster children. We depend upon committee members and volunteers to weigh and assist the doctors.

III. There are five doctors on the staff and an instructor for the postural class, giving from one to five hours a week without remuneration. The doctor in charge of the Wednesday feeding conference is training younger doctors and volunteers to carry on the work in the new health centers being organized under the Board of Health. Students from the University of California and Stanford Medical Schools continue to attend the foster-baby feeding conferences for instruction.

There is one paid visitor who does full-time follow-up work with an automobile at her disposal. Fourteen volunteers work at the health centers. A housekeeper has the use of the first floor for the care of the conference rooms on the second floor. This plan has worked out very satisfactorily.

The Associated Charities foster children are under the supervision of a special full-time nurse.

The group we touch in our well-baby work is an independent one, chiefly of young mothers with their first children, who want to have many questions answered and some one to help bear the responsibility. The children are examined individually.

V. Budget, \$5,000.

The funds that support the Children's Health Center are from donations and subscription and the collection of Red Stockings filled by little children at Christmas time.

As yet, no fee has been charged, the committee feeling the work to be entirely educational and preventive.

VI. The children are resident in San Francisco except for a few cases which we refer back to the Health Centers started in Alameda County.

The Children's Health Center of A. C. A. is considered the pioneer in the health center work in the West and it is interesting to note that the well-baby work has spread in San Francisco this year to include the three new district centers and the three University Hospital feeding clinics, and three other hospitals are soon opening well-equipped well-baby nutritional clinics with follow-up nurses.

VII. California has an active Child Hygiene Bureau in the State Department of Health under Dr. Ethel Watters, who worked with the A. C. A. committee for some years. She travels about the State directing child welfare work and organizing rural health programs. The office is a supply station for literature and information on health questions.

VIII. We now have a division of Child Welfare in the city. There are four health districts in a population of 508,412.

XI. There has been a decrease in the mortality rate and in the death rate of children.

Total births in city for year ending December 31, 1919....	8,386
Total deaths under 1 year	548
Total deaths among children between 1 and 6 years.....	665
Age limit of children under care.....	6
Total number under 1 year	594
Total number between 1 and 6 years.....	282
Total number conferences each week (3 feeding).....	5
Average number babies attending each week.....	71
How early in child's life it is brought to our care.	
Average cases—2 to 3 months.	
Earliest case—2 weeks-5 days.	

ANNIE VAN WINKLE, *Secretary-Visitor*

CALIFORNIA DAIRY COUNCIL

San Francisco

I. Incorporated February 6, 1919.

II. Scope of work: The Council is purely an educational organization. It does not engage in business. Its two main purposes are:

1. To arouse all people to a realizing sense of the supreme necessity of a more liberal use of milk and milk products in the diet of children if they are to attain the physical and mental development which cannot otherwise be acquired; and to enlighten the public concerning the superlative value of dairy products in maintaining the bodily and mental vitality and vigor of adults.

2. To aid in the work of educating producers to higher efficiency in production, to stabilize prices, and to improve sanitation and quality.

The educational work on food values is carried on in cooperation with State, county and city school and health officials, physicians, welfare workers, charitable organizations, etc., and consists principally in assembling facts bearing upon the food values of milk and other dairy products and their effect upon human health and efficiency; to disseminate knowledge of the work of scientists such as Dr. E. V. McCollum, of Johns Hopkins University, Dr. H. C. Sherman, of Columbia University, Professors Osborne, Mendel and others.

This is done by means of lectures, pamphlets, moving pictures, visual exhibits of the various dairy products compared with other foods on the basis of total nutrients, extensive surveys of elementary school children in the principal cities, to ascertain the percentage of children receiving milk regularly in their diet, and their physical condition and school progress, as compared with those who receive milk irregularly or not at all.

Educational work among producers is carried on in cooperation with the U. S. Department of Agriculture, University of California, and other State and local agriculture organizations. Special effort is made to educate individual dairymen to increase production, improve quality of cattle (through the use of pure bred sires), learn sanitation and improve quality of product. This work is accomplished through the holding of dairy improvement meetings, promotion of cow testing associations, children's calf clubs, pure bred bull sales, etc.

(MRS.) CYNTHIA PRICE, *Assistant Secretary*

COLORADO

VISITING NURSE ASSOCIATION

Denver

I. Organized in 1885 as Denver Flower Mission. Incorporated in 1904 as the Visiting Nurse Association of Denver. It is directed by a board of twenty-four women.

III. Staff: Superintendent, two supervisors, eight nurses for general work; four nurses for infant welfare work; one nurse for tuberculosis; three student nurses during teaching months. Four doctors who serve gratuitously.

IV. Outline of activities:

Visiting nursing including prenatal.

Infant welfare—age limit two years.

Tuberculosis.

Hourly nursing.

We are the only organization covering infant welfare which includes conferences and home visiting; three new stations were opened and monthly

talks to mothers were given by doctors at two of the stations. It is contemplated that the students of the University of Colorado Medical School will attend the conferences as a part of their pediatric instruction. A daily, sick babies' clinic was organized in June, 1920. Six infant welfare conferences are held weekly.

The prenatal and infant welfare work are educational in character and the service is free; a fee of fifty cents per visit is charged for nursing work when patient is able to pay. Mothers attend conferences without any regard to financial circumstances. The amount of milk given to mothers has been decreased considerably.

No work is done in connection with the pre-school age child.

V. Total budget for current fiscal year is \$22,786. The Association is financed by membership dues, interested individuals, the Federated Charities, receipts from patients and Metropolitan Life Insurance Company (for the care of its policy holders).

Our most difficult problem is lack of physicians.

O. PHILOMENA SUPPER, R. N., *Superintendent*

CONNECTICUT

DIVISION OF CHILD HYGIENE, DEPARTMENT OF HEALTH

Bridgeport

I. Organized 1918.

II. Scope of work:

1. Medical inspection of schools (32 public and 10 parochial).
2. Educational: work in schools—high school course of eighty periods.
3. Six health stations for (1) Prenatal care and examination; (2) infant welfare and feeding; (3) pre-school examinations, supplemented by four months' intensive work on birth registration, follow-up for observation and advice (May 15 to September 15).

4. Working certificate examinations.

III. Staff: One supervisor (field supervision); 15 field nurses; 2 doctors on full time, one in contagious division.

Dentists: (there is a division of dental hygiene in the Department).

Volunteers: 24, who give two hours a week in health stations.

IV. Divisions of work:

Prenatal: One weekly clinic, 9 field workers and 2 supervisors, directed by the Division of Child Hygiene and the Visiting Nurse Association.

Maternal: Number of deliveries, 41 per cent by midwives, 59 per cent by obstetricians.

Infant Care: Number of centers, 6; number of weekly conferences, 8. Clinics for sick babies, three times weekly.

Pre-school age: Number of weekly clinics, 8; clinic for sick children.

School Age and Adolescence: Two full time medical officers in charge of the medical inspection of schools. There are 17 school nurses. Average time given weekly to school inspections, is 15 hours. Average time devoted weekly to home visiting, 18 hours. During the summer months the school nurses are utilized in infant welfare work and intensive district field work—May 15 to September 15.

Communicable disease control: Quarantine is controlled and lifted by the Department of Health. Wassermann and Luetin tests are given routinely. Positive reactions are followed by routine treatment.

V. Total budget for current fiscal year:

School supplies	\$650.00
Printing and stationery	500.00
Incidentals	500.00
Infant welfare	2,000.00
Educational	2,000.00
Child hygiene	4,900.00
Salaries	26,440.00
	<hr/>
	\$36,990.00

No fee is charged for services given by the Division.

VII. There is a Division of Child Hygiene in Connecticut.

IX. The city of Bridgeport is zoned into health districts, of which there are 12. Population of the city is 143,500 (1920 census).

X. Improvements observed as a result of activities of previous year; improved health among children; decrease of communicable diseases; increased intelligent care on part of parents; wider community interest in the health of the children as manifested by the increase in number of clinics, increase in the budget for the care of children; there has also been a decrease in the infant mortality rate and in the death rate among children. The reporting of the morbidity has improved so much that an apparent increase in mortality is thus explained in face of a yearly decrease in mortality.

XI. Statistical, for the year ending December 31, 1919: Total births, approximately 5,000. Total deaths under 1 year, 401. Total deaths among children from 1 to 5 years, 142.

XII. Public Health Education: We have an eighty period (40 minutes each) course in the high school senior (pre-normal) class of one hundred and fifty girls, in which we teach by lectures and demonstrations the following:

- (1) Home care of sick,
- (2) Care of the baby,
- (3) First aid,
- (4) Health habit formation

XIV. The high school course is one of the best things we have. Forty minutes daily given to demonstration for forty periods, and forty minutes daily for lectures for forty periods, making eighty periods in all to senior high school girls (150), going to normal school to become teachers. Lectures are given by a physician with teaching experience, and demonstrations are given by a registered nurse.

LEROY W. WILKES, M. D., *Director*

CHILD WELFARE DEPARTMENT, NEW HAVEN VISITING NURSE ASSOCIATION New Haven

I. Organized 1909. The work is carried on under the direction of a board of thirty-three women, the number of directors being limited to that number.

II. Scope of Work: Visits to homes of well babies, teaching mothers formulae (when necessary); care of sick babies in the home; conducting well baby conferences and conferences for babies between 2 and 6.

III. Staff: Nurses, 1 supervisor and an assistant, who visits homes with nurses and hold conferences or round tables; 12 field nurses, 7 doctors on part time, who give their services free. Two social workers, volunteers. One dietitian on full time.

IV. Divisions of Work: Obstetrical department; number of nurses, 2 on full time and 1 on part time. The work has been running about a year. Patients pay \$5.00.

Infant Care: Number of centers, 11; number of weekly conferences, 13. Clinics for sick babies. Combination clinic for sick and well infants.

Pre-school Age: Weekly clinics, 3; clinics for sick children, 1; for sick and well children, 1; nutritional classes, separate from clinic, 1.

Communicable disease control: The only communicable diseases cared for by the Visiting Nurse Association are measles, whooping cough, mumps and chicken pox.

The activities of the Association are not limited to New Haven, but have been extended to two adjoining rural communities.

V. Total budget for 1919, \$82,000. The Association is supported by membership dues and special contributions. The methods found most successful in raising funds are public campaigns and memorials. A fee of sixty cents, or over, is asked if the family is able to pay; if not, services are rendered free of charge.

VI. Cooperating Agencies: The Association cooperates with the Department of Health, the university, hospitals, medical schools, relief organizations and other activities.

VII. There is a Division of Child Hygiene in Connecticut.

VIII. There is no Division of Child Hygiene in New Haven.

IX. Population, 165,000.

X. Improvements observed as a result of activities: improved health among children and early reporting of illnesses; increased intelligent care on part of the parent. Wider community interest in the health of children as indicated by increase in the number of clinics, in medical and nursing care and a decrease in the infant mortality rate.

XI. Statistical for the year ending December 31, 1919:

Prenatal Care: Total number of mothers cared for, 154. Total number of infant deaths during first month, 3. Average cases of mothers registered between the sixth and seventh month, earliest case in the third month.

Postnatal Care: Age limit of babies and children under care, 6 years. 24 per cent of the babies born in the city during the current calendar year were under the supervision of the Association. Total attendance at well baby clinics, 10,955. Living births, 4,410; stillbirths, 150. Total deaths among infants under care of the Association, 41; among children from 1 to 6, 27.

XIV. Supplemental Statement:

The Infant Welfare Association of New Haven became a Department of the Visiting Nurse Association in the fall of 1918. During 1919, five new well-baby conferences were established, one of which is for children 2 to 6 years old. This brought the total number of conferences to 13, at four of which milk is dispensed.

During the year a dietitian was added to the staff, which now includes 1 supervisor, 1 assistant supervisor, 12 field nurses, 9 station matrons, and 3 visiting housekeepers who teach mothers in the homes cooking, planning of meals, etc. The department cared for 24 per cent of the babies born in the city during 1919 and had under care a total of 3,876 children under 6 years of age.

The department cooperates very closely with all organizations in the city and especially with the Babies' Temporary Home, to which we send a great many babies when one of the parents is ill. Here they are kept a few weeks until the family is readjusted, the family paying \$4 a week for their board.

July 1, 1920, a Health Center was opened, covering three wards in the Italian district, where generalized nursing is done. This took over 900 of our babies and three of our weighing stations. At this Health Center, medical examinations are given all in the district and diagnosis made and advice given as to where treatment may be had.

J. I. LINDE, M. D., *Medical Director*

NEW HAVEN HEALTH CENTER

New Haven

I. The New Haven Health Center was organized in the early summer of 1920 by the Board of Health, the Visiting Nurses' Association, the New Haven County Chapter of the American Red Cross, and the New Haven Medical Association. It is working out a plan of adequate health preservation and disease prevention in a district of about 20,000 population, of a rather homogeneous character, about 90 per cent of which is of foreign parentage, largely Italian. It is offering:

1. Visiting nurse service
2. Medical examinations to well or ailing people
3. Stimulation of health activities on the part of local agencies, with emphasis upon cooperation

It is acting as a clearing house for sick individuals who need medical care.

It is not giving medical treatment, but refers all individuals needing medical care to private doctors, dispensaries or hospitals of the city. Instead of specialized nursing, each nurse is, or shortly will be, a general public health nurse working in a small section of the health center district.

The policy of the Health Center is to put its major emphasis upon the four leading health problems:

1. Infant welfare.
2. Respiratory diseases
3. Degenerative diseases
4. Tuberculosis

The main attack upon the infant mortality problem will be devoted to the prenatal period and the first month of life. Prenatal examination service, under the direction of a woman physician, was established August 15. It is planned that each baby will be visited three or four times during the first month after birth.

PHILIP S. PLATT, *Director*

VISITING NURSES ASSOCIATION

Waterbury

I. Organized 1903.

II. Scope: General bedside nursing accompanied by teaching of nursing and hygiene; prenatal care and instruction and the supervision of children up to two years of age. Baby Welfare Stations, supplemented by visits in the homes.

III. Staff: Nurses, superintendent and assistant superintendent; 9 staff nurses; 1 registrar; 2 pupil nurses.

Doctors: 5 on part time; 5 on free service.

Volunteers: 1 nurse; 3 hours a week.

IV. Divisions of work: Prenatal, 9 field nurses.

Infant Care (under 1 year): Number of centers; total weekly conferences,

9. Sick babies are referred to the dispensary; 46 per cent of the babies under six months on the roll are breastfed.

School age and adolescence: 2 part time medical officers; 5 school nurses. Average time (weekly) given to school inspection, 25 hours; to home visiting, 5 hours. School nurses do not work during the summer months. Medical inspection is under the Board of Health. The other departments are under the Board of Education. Defects corrected during 1919, 575 (estimated). No mental tests are made.

Communicable Disease Control: Two nurses working under the Board of Health make educational and supervisory visits to the homes; the Anti-Tuber-

culosis League, a private association, secures admission to sanatoria and does educational and preventive work. Two nurses do this work. The city provides three weekly clinics for the treatment of venereal diseases.

Quarantine is controlled and lifted by the Health Department. Quarantine cases are cared for by special nurses.

V. Financial: Budget for the current year, \$25,975.30 (this includes all nursing service). The organization is supported by a city appropriation of \$800 for Baby Welfare Association; special contributions, and a small endowment fund. Methods found most successful in raising funds: Letters for nursing work and newspaper campaign for Baby Welfare Work. A fee of sixty cents or such part of it as patient is able to pay is asked for nursing care. All educational and preventive work is free.

VI. Cooperating Agencies:

City has a children's commission. The State Department of Health furnishes literature, slides and educational material; the City Department of Health refers cases for nursing care; Waterbury Hospital sends pupils for two months work; relief organizations provide boarding homes and supervision where necessary; the Vacation House, which is closely associated with the V. N. A., is open from June to September for mothers and young children. The pupil nurses spend two weeks of their time with the V. N. A. doing child welfare work.

VII. There is a State Division of Child Hygiene.

VIII. There is no city Division of Child Hygiene.

IX. The city is zoned for sanitary inspection and the Visiting Nurses Association has divided the city into nine districts for its work but there are no regular health districts.

B. Population: State estimate, 109,229; census of 1920, 95,000.

X. Improvements observed as a result of activities of previous year: General improvement in frequency and seriousness of summer intestinal infections, which can be attributed to more intelligent feeding and care. Wider community interest in the health of children is manifested by an increase in the number of school nurses; provision of two dental hygienists; city appropriation for Baby Welfare Association increased by \$300. Infant mortality rate, 1918 (exclusive of influenza and pneumonia), 110; 1919, (including all causes), 111.

XI. Statistical for year ending December 31, 1919:

A. Prenatal care: Number of mothers cared for during the year, 368; (prenatal, 93); average number of months under care, 2.5; total deaths of mothers, 3; total number of infant deaths, 3.

B. Postnatal Care. Infant care. Pre-school age and older children. Age limit of babies under care, 2 years; total number care, 1,776; total attendance during the year at consultations 0-2 years, 1,330. Total births, 2,807; total deaths under one year, city, 320; under care of V. N. A. (under 2 years), 68. Total deaths among children 2-6 years: City, not known; under care of V. N. A. (2-6 years), 5.

XII. Record of child from birth to two years: National form is used.

XIV. Supplemental Statement:

A most significant piece of work has just been started in the delivering of birth certificates for the State Department of Health. The City Health Department fills in the certificates from their records and sends them to us for delivery. This puts us in touch with all registered infants much sooner, gives us a reason for going to the home and makes us more welcome.

MARY L. WRIGHT. R. N.. *Superintendent*

DELAWARE

THE RECONSTRUCTION COMMISSION OF THE STATE OF DELAWARE*

Wilmington

I. Organized April, 1919. Commission is composed of four men and three women. There is also an auxiliary committee of women.

II. Scope: The act under which the Commission operates requires that it devise and put in operation measures for child welfare, community organizations and matters inseparably connected therewith, and that it make recommendations for legislative and executive action. Accordingly the most urgent child welfare needs have been met in so far as possible, chiefly by intensive health work for mothers, babies and children through 15 child health centers, a related home visiting instructive nursing service, examinations of school children and incidental follow-up work and a very extensive mouth hygiene campaign. A steady maternal and child health educational campaign has also been conducted through talks and written material. In addition, other than health problems have also received attention. The Commission has acted somewhat in the capacity of clearing house to put child welfare needs and facilities in touch; has directed a general child welfare study of the state by volunteer local committees, and has promoted a "Go to School" campaign among children who were holders of general and provisional employment certificates. The Commission is also formulating and assisting other child welfare agencies in formulating child welfare legislation and plans for its introduction to the public and the 1921 session of the Legislature.

III. Staff: A director of child welfare; one supervising nurse; 12 field workers; one physician, on full time, assigned by the U. S. Public Health Service as medical consultant for the Reconstruction Commission; three social workers, and about 25 volunteers.

IV. Divisions of work: (Note) Work under A, B, C and D is done by the Child Health Center Service as well as many school and adolescent cases that cannot be fully handled under school nursing plan.

A. Prenatal: (Part of Health Center) Clinical and field work directed by the Reconstruction Commission.

B and C. Infant care (under 1 year) (Health Center Service): Number of centers at which conferences are held, 16; weekly conferences, 20; preventive consultations, 17; clinics for sick babies, 3.

D. Pre-school age (1-6 years) (Health Center Service): Weekly conferences, 20; nutritional classes affiliated with children's clinics, 3.

Mental health: Suspected cases of mental subnormality or abnormality are put in touch with agencies equipped to give more care to such cases.

E. School age and adolescence: Medical inspection of the schools is carried on under the direction of one full time and 20 part time medical officers. There are 14 school nurses, 9 give full time, 5 part time. Follow-up work is done by the school nurses during the summer months.

Medical Inspection, Health Development and Physical Education Departments are under State and City Boards of Education, the Reconstruction Commission furnishing the medical director to the State Board of Education. The State Board of Education employs one full-time psychologist who is testing school children as rapidly as possible.

G. Communicable disease control: Special State Commission for control of tuberculosis. State has met government appropriation for control of venereal disease and is operating clinics, although funds do not permit educational and follow-up work. State Board of Health requires full details on all typhoid reports. Quarantine is controlled and lifted by the State Board of Health and attending physicians in rural districts and local authorities in

towns. Wassermann test is given routinely in venereal disease clinics and the workhouse.

The activities of the Commission are State-wide. The Commission does not own a mobile unit but a dental truck with traveling unit, under the State Board of Education was secured by the efforts of the medical consultant of the Commission.

V. Financial: Budget for the current fiscal year, about \$40,000. The work of the Commission is supported by an appropriation of \$25,000 from the State, supplemented by private contributions. No charge is made for the work that is done by the Commission.

VII. and VIII. The Reconstruction Commission functions as a division of Child Hygiene. It may be said to act as such for the city as well as State.

IX. Population of State, 223,003; of Wilmington, 110,168.

X. Improvements observed as a result of activities of previous year: Improved health among children; noticeably more intelligent care on the part of fathers and mothers; wide community interest and a decided decrease in the infant mortality rate.

XI. Statistical, for the year ending December 31, 1919:

Postnatal Care. Infant Care. Pre-school age and older children. Total number under one year cared for in 5 months, 4,841; total number between one and six years cared for in 5 months, 8,207; total number between 6 and 14 years cared for in 5 months, 5,004; total number between 14 and maturity cared for in 5 months, 285; total births in the State, 4,730; in Wilmington, 2,709; total deaths under one year: in the State, 562; in Wilmington, 290; total deaths among children from one to 5 years: in the State, 216; in Wilmington, 113.

XII. Record System: We have a continuous record of the child, including prenatal care and extending through school age period. The form is based largely on the suggestions made by Miss Hunter of the Federal Children's Bureau.

XIV. Supplemental Statement:

It is the obligation and aim of the Reconstruction Commission of Delaware to develop and promote as comprehensive a general child welfare State program as possible. Accordingly, it has devised and put in operation projects of various kinds in the several fields of child welfare. However, because of clearly indicated need, the main effort has been put into the field of child health work.

The Commission maintains and operates ten children's health centers, five in Wilmington and five in other points in the State, where well and sick baby clinics are held, once or twice a week. In addition to duty at centers, the child health center nurses do instructive home visiting. An interesting feature of the health work of the Commission is its cooperative work with local committees of child welfare in six towns. The local committees have provided and equipped child health centers under the guidance of the Reconstruction Commission, and the Commission furnishes supervision and nursing service for the centers. The Commission has also given assistance in the medical and nursing service for school children carried on under the State Board of Education. The Medical Consultant of the Commission acts as medical director for the school examinations and nursing follow up and the Reconstruction Commission nurses have helped in examinations and follow up. By the efforts of the Medical Consultant of the Commission a public spirited citizen of Delaware was interested to establish a fund of \$20,000 that is providing for two years a school dental unit, consisting of a dentist and two hygienists who began state-wide work September 1st. The unit is equipped with a motor dental truck.

The infant death rate in Wilmington has fallen 83 per cent during a year of Reconstruction Commission child health center activity. Reports from other parts of the State where the Commission has child health centers are also very encouraging.

(MRS.) INA J. N. PERKINS, *Director*

* As a result of the work of the Commission a permanent Child Welfare Commission was established by the enactment of a bill by the State Legislature in the spring of 1921, appropriating \$60,000 for the work of the department. The bill provides that:

"It shall be the duty of the Commission to take over, and further to develop the child welfare activities conducted by the Reconstruction Commission of the State of Delaware; to maintain a traveling child health center to serve the sparsely settled sections of the State; to cooperate with State, County and local official bodies in the development of such child welfare work as the Commission may believe will materially advance the interests of the children of the State; to make every reasonable preparation to transfer various branches of its work as rapidly as possible to appropriate State agencies; to make a study of the needs of children a definite part of its work; and to make recommendations for executive and legislative action in matters relating to children."

Other legislation secured by the Commission:

Repeal of the "binding" law; revision of the marriage law; amendment of the bastardy law (providing for increased amounts and for legitimation of children born out of wedlock); also a bill designating the prophylactics that may be used in the eyes of the new born, and a change in the birth certificate form to require information concerning the prophylactic used, and requiring that the reverse side of the certificate shall carry at least a summary of the portions of the law pertaining to birth registration and prophylactic against inflammation of the eyes of the new born; also an act carrying an appropriation of \$5,000 to provide free diphtheria antitoxin. Schick testing and immunization serum, and an act for a \$2,000 appropriation to provide for a nurse to supervise midwives for the State Board of Health.

DISTRICT OF COLUMBIA

CHILD WELFARE SOCIETY

Washington

I. Organized 1901. The society is governed by a board of trustees, composed of thirty-nine men and one woman, and an auxiliary board of twenty.

II. Scope of Work: The society conducts eight welfare centers for infants and pre-school children, and three prenatal conferences.

III. Staff: Nurses, 1 supervisor, 12 field workers; 1 doctor on full time, 25 on free service, each of whom gives on an average of two hours per week. Social workers, 4 volunteers from American Red Cross; other volunteers, 10; 1 clerical assistant.

IV. Divisions of Work:

Prenatal: Number of weekly clinics, 5.

Infant Care: Number of centers, 8; number of weekly conferences, 18. 75 per cent of the babies under six months in attendance at the conferences are breast fed.

V. Total budget for current fiscal year, \$26,693.39. Society is supported by membership dues, a Federal appropriation and special contributions.

The services of the society are given free of charge, if people are unable to pay; otherwise a fee of from ten to twenty-five cents is asked.

VI. Cooperating Agencies: Babies and pre-school children are referred to the society by the American Red Cross, local Health Department and Instructive Visiting Nurse Association, and other organizations. All midwife

cases are referred to the society by the State Department of Health. Centers have been established at two hospitals; teaching clinics are held for students in connection with the medical schools.

XI. Statistical for the year ending December 31, 1919:

Prenatal: Total number of mothers cared for, 233. Average number of months under care, 4; average cases registered during the sixth month; earliest case during the second month. Total number of infant deaths, 3; at birth, 3.

Postnatal care: Age limit, 6 years. Total number under two years cared for, 3,573. Total number between 2 and 6, 393.

Percentage of the babies born in the city during the calendar year under care of the society, 31.7 per cent. Total attendance at consultations under two years, 16,600; from 2 to 6 years, 1,725. Total births, 8,231. Total deaths under 1 year, 702; among infants under care of the society, 23.

XIV. During the past year effort has been made to extend the scope of the work of the society and to include the pre-school child. An encouraging start has been made. Much publicity has been given this phase of the work. Intensive surveys of different sections of the city have indicated the necessity for thorough examination of the pre-school child. It is the plan to establish a nutrition class for those who have been found underweight, and to have all physical defects remedied, if possible, by proper agencies.

HARRY S. BERTON, M. D., *Director*

ILLINOIS

ELIZABETH MCCORMICK MEMORIAL FUND

Chicago

I. Organized 1908. The fund is under the direction of a board of trustees, composed of five men and two women.

II. Scope of Work:

The Elizabeth McCormick Memorial Fund is a Foundation devoted to "improving the conditions of child life in the United States." It undertook:

1. The reduction of infant mortality through the conduct of baby tents during the summer months. The work, when successfully demonstrated, was turned over to the Infant Welfare Society of Chicago, which organized to carry on stations all the year round.

2. Conducted 23 open air and open window school rooms in Chicago for ten years, as an educational experiment. After a successful demonstration, the conduct of the schools has largely been turned over to the Board of Education. The Fund still conducts propaganda for open air schools throughout the country.

3. Carried a general program for the promotion of Child Welfare in Illinois during the Children's Year, acting as Child Welfare Committee of the Illinois Council of Defense.

4. Now carries on nutrition classes for malnourished children in public and private schools, settlements, juvenile court groups, summer camps, etc.

5. Maintains exhibits on various phases of child welfare and open air schools, which are loaned to any groups desiring them, and issues literature upon request.

III. Staff: One doctor on full time, 5 on part time; 3 trained social workers, assistants to dietitians in nutrition work; 4 dietitians on full time; 5 clerical assistants.

Administrative force: Director, 2 assistant directors, 3 secretaries, 1 financial secretary, 1 supervisor open air schools, 1 teacher open air school (full time), 1 open air school matron, 2 helpers.

IV. Divisions of work: Administrative and executive; open air schools; nutrition classes; general education work for health of children.

Nutritional classes: Number of weekly classes for school children, 13; 1 class for pre-school children; 13 outside of schools; 3 in summer camps; under charge of physician who gives physical examinations and sometimes conducts classes. One nurse who does some home visiting, and a dietitian. The class method is used. Activities not limited to Chicago. The educational work is national in extent. The Fund does not direct state or county work, but stimulates it and issues educational material of all sorts. Plans of work, literature, and exhibits furnished. The Fund holds institutes for the training of health workers, etc.

V. Total budget for current fiscal year, \$74,000. The organization is supported by an income from endowment only. The work done is given free, except a small fee for certain training course, and for some literature.

VI. Cooperating agencies: Cordial cooperation with the State Department of Health, helping to extend state work and educational service; and with the University through the Home Economics Department and Extension Service. Also cooperates with relief organizations and other groups.

VII. There is a Division of Child Hygiene in Illinois.

X. Improvements observed as a result of activities of previous year: Improved health among children; lessening of communicable diseases; increased intelligent care on part of parents, principals, teachers and social workers; wider community interest in the health of children as manifested by increase in number of clinics.

XIII. Public Health Education: We have no committees working in connection with our organization, but we are extending the public health campaign, especially in relation to children, in the following way:

1. The Director of the Elizabeth McCormick Memorial Fund acts as chairman of the Child Welfare Committee of the Woman's City Club, which supports one station of the Infant Welfare Society of Chicago, which gives prenatal, maternity and infant care, with nutritional work for the pre-school age child.

2. The Director is chairman of the Committee on Child Welfare under the Public Welfare Department of the General Federation of Women's Clubs. In this capacity there will be opportunity for promoting programs on Child Welfare in every Club in the country. Last year the Director and Dr. Caroline Hedger of the staff prepared the program on Child Welfare for the Illinois Federation of Women's Clubs, and for the Parent-Teacher Association of the State.

3. The Director is chairman of the Children's Committee appointed by the Director of the Public Welfare Department of Illinois, which Committee will prepare a report on the responsibility of the state toward its children and present suggestions for the care of children in institutions and out of them.

4. During Children's Year the Director acted as chairman of the Child Welfare Committee of the Illinois Council of Defense. During this year 1,272 different communities in Illinois were active in the weighing and measuring of children and in the general program of the Children's Year. There were 1,008 chairmen, each with a local committee to carry on the work in the State, and with many of these chairmen the Memorial Fund is in communication, suggesting programs for local work, providing exhibits, literature, speakers, etc. Over fifty Child Health Centers were established in Illinois as a result of the Children's Year propaganda.

5. The Fund maintains one speaker on full time, and three members of the staff give part time to lecturing in Illinois and the Middle West, addressing Clubs, Parent-Teacher Associations, Tuberculosis Organizations, Teachers' Institutes, County Fairs, Public Health Nurses, and others.

6. The Fund last year held four Institutes on nutritional work, two under the personal direction of Dr. W. R. P. Emerson of Boston, with a total of 89

students. Those enrolled were physicians, public health nurses, dietitians, teachers, and social workers, and a few mothers. It also gave two training courses for two groups of 40 each of public health nurses who were taking the course at the School of Civics and Philanthropy.

XIV. Supplemental Statement:

For the past ten years the Fund has been conducting open air schools in Chicago, which have proved that the majority of children would gain under the program of good medical and nursing service, fresh air, good food and adequate rest. It was found, however, that a considerable portion of the children failed to gain, or did not hold their gains, after returning to the ordinary school room, or going out into industry. During the past year the Fund has followed the methods developed for the treatment of the malnourished child by Dr. W. R. P. Emerson, of Boston, and has carried on intensive health education by means of the nutrition classes in the open air schools, the average public school, private schools, charity groups, open air camps, etc.

The gains in these nutrition classes have been most gratifying, and as a result of the year's work the Trustees and the staff of the Memorial Fund are convinced that child health is best promoted by intensive health education. They are convinced that the problem of the malnourished child is not one essentially of poverty but of ignorance among rich and poor alike; and that the answer is therefore extension of health education and not philanthropy. They believe that health education should start in the child health center, giving care and instruction in the prenatal and maternity periods, for the infant and pre-school age child; that health education should become part of the regular curriculum in every school; that nutrition classes or some similar service should be established for the undernourished children, and that the whole movement should have a sound medical background. They believe that the forces making for health locally and nationally should be so coordinated as to make these services available to every child and every parent in the country.

Alice H. Wood, *Director*
(Mrs. Ira Couch Wood)

INFANT WELFARE SOCIETY

Chicago

I. Organized 1910. Incorporated as a private agency. Governed by a board of directors comprised of 17 men and thirteen women.

II. Scope:

Prenatal: Weekly clinic with follow up home work.

Babies to 2 years: Biweekly conferences with follow up home work.

Children to 6 years: Weekly clinics with follow up home work.

Work done by nurses and dietitians.

Nutrition Clinics. In March of 1919 was opened the first nutrition clinic in our stations. This was undertaken as an initial study under the direction of Miss Lydia Roberts of the School of Education of the University of Chicago. The work with the child from two to six was carried on much as is our work with the younger infant, having the services of a doctor and nurse with the added service of a dietitian. The initial clinic was so successful that the Board will include work with the pre-school age child just as fast as funds are available to extend the program.

Not only is the child weighed, measured, given a thorough physical examination by the doctor, the mother given feeding instructions by the dietitian at the Clinic, but this advice is followed up with home visits by the dietitian and nurse. The responsibility of the doctor and nurse is to see to it that the child is free to gain and the responsibility of the dietitian to see that the mother knows what will make him gain and then most effectively employ the means she has at hand to bring it about.

III. Staff: Nurses, 2 supervisors; 37 field workers. Doctors, 25 giving 2 to 3 hours per conference; none on free service. Dietitians, 1 supervisor, 4 field workers. Volunteers, 40 who give from 1 to 6 hours per week.

IV. Division of Work:

Prenatal: At present time 3 clinics are being conducted with obstetricians in charge.

Nurses are doing full time clinical and field work.

Infant Care (under 2 years): 24 stations in which semi-weekly conferences are held.

Pre-school age (2 to 6 years): 9 stations carry the nutrition work through weekly clinics dealing with the older child at a separate time from the mothers' conference with babies.

Children who are boarded through the Illinois Home and Aid Society have the supervision of a nurse from the Infant Welfare Society and attend conferences at least once a month.

V. Financial: Total disbursements for 1919, \$75,848.90. Organization supported by special contributions.

The method which has been most successful this current year is the personal solicitation and letters by finance committee. A general publicity campaign has been helpful.

Work carries no fee with it, but contributions by mothers attending conferences are encouraged.

VI. Cooperating Agencies: All cases are cleared through the Registration Bureau.

X. Improvements observed as a result of activities: Unquestionably increased intelligent care on the part of the father and mother; wider community interest as manifested by increase in number of clinics; decrease in mortality rate of infants cared for from 3.4 per cent in 1916 to 1.9 per cent in 1919.

XI. Statistical:

Prenatal: One station 1919. . Total number of mothers cared for during year, 335. Average number months under care, 4. Total deaths of mother, 1. Total number of infant deaths, 6; at birth, 4; during first month, 2. Average cases come under care during fifth month; earliest during second month.

Maternal: Number of deliveries by obstetricians, 70 per cent; hospitals, 12 per cent; out-patient service, 46.9 per cent; patients' home, 28.1 per cent.

Postnatal: 2 years age limit of babies under care. Total number cared for, 1919, 8,793. No adequate birth registration, hence any percentage cared for to total births a matter of surmise. Total baby conferences attendance for 1919, 48,525. Estimated (Department of Health) number of births in Chicago for year ending December 31, 1919, 65,000.

XII. Record System: Records in use carry a child from birth to 6 years. The record indicates defects remedied, character of feeding, environmental surroundings controlled. Our own records are used.

SARA B. PLACE, R. N., *Superintendent*

LYING-IN HOSPITAL AND DISPENSARY

Chicago

I. Organized 1875.

III. Staff: Nurses: 16 supervisors; 11 field workers; 3 trained social workers.

IV. Divisions of Work: Prenatal, number of weekly clinics, 9. Maternal, number of deliveries in hospital, 2,129; in outpatient service, 1,139.

V. The organization is supported by membership dues and by special contributions. No definite fee is asked, but patients delivered in their own

homes are asked to give a donation to the institution according to their ability to pay.

VI. Cooperating Agencies: Babies born under the supervision of the hospital are referred to the Chicago Infant Welfare Association, when discharged.

XI. Statistical for the year ending December 31, 1919:

Prenatal: Total number of mothers cared for, 2,129; number of deaths during pregnancy, 1; at childbirth, 10.

Total number of infant deaths, 43 stillborn; during first month, 47. Average cases registered during sixth or seventh month; earliest, second month.

JESSIE F. CHRISTIE, R. N., *Superintendent*

INFANT WELFARE STATION (EMMA MATTHIESON CHANCELLOR MEMORIAL

LaSalle

The Health Department of the Tri-Cities, LaSalle, Peru and Oglesby was established in March, 1914, by a donation from the late F. W. Matthieson. The Health Department as organized contemplated assuming general supervision over all matters pertaining to hygiene and sanitation in the three cities under similar ordinances. In order to carry out more thoroughly the rules of sanitation there was established at the same time the Hygienic Institute, the control of which in 1916 was transferred to a Board of Trustees.

The Institute has assumed the activities of the Emma Matthieson Chancellor Baby Welfare Station. This station by conference and visits to homes supervises the welfare of the infant up to 18 months of age. We also furnish milk to babies and mothers who cannot afford to pay for it. Prenatal advice is freely given to the expectant mother.

This department has completed its seventh year of work. Babies are not enrolled after the age of 18 months but are carried on our files until they reach the age of two years. We try to enroll the babies as soon after birth as is possible, as the main trend of the work of the infant welfare department is to give instructions as to proper means of keeping a well baby well, although we also care for any who are sick.

The conference held in LaSalle once a week at the Hygienic Institute has been fairly well attended. The conferences held in Peru and Oglesby during the past year dropped considerably in attendance, very probably due to the unsettled conditions brought about by the prevalence of the influenza epidemic. At the conferences the babies are weighed and instructions are given the mothers as to the proper care and feeding of the baby. Milk tickets are distributed to the needy on clinic days for which each recipient who is able pays a very small sum. Instruction in the preparation of special feedings are given the mothers in their own homes and own surroundings.

The week of May 11 to 18 was observed as Health Promotion Week. Health talks were given at the schools on general health and hygiene. One day was given over to the baby. Physical examinations and public instructions were made and given at the Red Cross headquarters. The examinations were made by different physicians who each donated two hours of his time to such work.

Several posters advertising Baby Day were made by the Art Class at the High School and were placed conspicuously about town and in the store windows.

CLYTHIA DeCOSTA, R. N.

INDIANA

BABIES' MILK FUND ASSOCIATION

Evansville

One nurse and a volunteer dentist were added to the staff during the year, and an additional clinic was opened in June. Pupil nurses of one of the hospitals are sent to the association for two days each week for instruction. Bacterial count of milk was made weekly during the summer months, and once a month during the balance of the year.

The office has been reorganized, and the record system revised through the assistance of Miss Estelle B. Hunter, of the Children's Bureau.

MARY C. TRIMBLE, R. N., *Supervisor*

THE CHILDREN'S AID ASSOCIATION

Indianapolis

The Children's Aid Association of Indianapolis was organized in 1905. It is a private organization, receiving a small annual grant from the Board of Health, in part support of its Baby Health Station work. Its Board of Directors is composed of twelve members, four of whom are women. There is an advisory committee for each of the several departments, that of the Baby Health Station Department being composed entirely of women, who, as members of the committee, assist the nurses at the regular weekly clinics.

The Association maintains a Department for Investigation and Counsel, a Department for Home Finding, the Baby Health Department, a Dental Clinic, an Employment Bureau for Children, and a Summer Fresh Air Camp in connection with which is a small summer hospital for sick babies.

The Baby Health Department personnel consists of a supervisor, who is also the supervisor of the local Public Health Nursing Association, and seven nurses, each assigned to a district for infant welfare work exclusively. A volunteer doctor is assigned to each of the eight clinics excepting the Central Clinic, which is in charge of a paid medical supervisor, who gives part time to the clinics.

The Home Finding Department is providing private homes for the care of a considerable number of infants. During the first six months of the year, homes were found for 35 children under two years of age, and a total of 2,389 days of care were afforded for these children; 73 children between two and six years were provided for, in the same period of time, with a total of 5,631 days of care. Sixty-nine older children were also cared for by this department. Each of these children is given careful medical examination on entrance, and is re-examined as occasion indicates. The department is in charge of a supervisor, with two visitors and a graduate nurse.

The Dental Department is in charge of a paid supervising dentist, who gives part time, with three volunteer assistant dentists. The assistant dentists will also be paid for their part time services in the near future. There are two dental clinic stations, a third to be opened in the near future. Five clinics are held each week, one of the days being set apart for colored children, with a colored dentist operating.

Prenatal work in Indianapolis is not supervised by this association. The Medical School maintains a prenatal clinic, and the Public Health Nursing Association is visiting prenatal cases.

PAUL L. KIRBY, *General Secretary*

STATE BOARD OF HEALTH, DIVISION OF INFANT AND CHILD HYGIENE Indianapolis

I. Organized 1919.

II. Scope: To see that every child in Indiana attains the highest degree of health possible to him. Children are reached by education of parents through clinics, literature, conferences, visits of nurses, etc..

Object: To teach and exemplify the conservation of infant and child life. Medical treatment, cure, relief, material aid are not contemplated.

Organization: A director; general assistant; nurse; dietitian; secretary

Exhibit: Child hygiene car: moving picture machine and films; obstetric outfits; layette; artificial feeding apparatus; complete nursery; charts; panels; photographs; stereoptican slides, etc.

Working program:

1. To select the special community in which a Baby Conservation School will be conducted by the Bureau.

2. Thoroughly inform and prepare the people of the community as to place, time, method and character of the work to be done.

3. To secure the moral support of doctors, business men, preachers and church societies, teachers, women's clubs, farmers' institutes, and to arouse general public interest.

4. Medical treatment and relief not given except in very extraordinary instances, for the main object and intention is to give instructions in hygiene, to teach the laws of health, how to prevent disease, with special teachings and demonstrations concerning pregnancy.

5. Make appointments and arrangements for talks, lectures and conferences.

6. Exhibit: Effort made to secure without rent, a vacant business or other room or rooms for the exhibit. Also to secure a hall where moving pictures may be shown and lectures are given. Headquarters should be in the exhibit room or nearby.

Field work was begun in May, 1920. The work is done by townships, on invitation from the community. The work is adapted to the needs of the individual community. Women are appointed Township chairmen so as to leave a nucleus of organization for follow-up work.

Places at which health examinations were held include Elhart, Winona, Warsaw, Kosciusko County and at the State Fair. At the State Fair, the south wing of the second floor of the Women's Building was rebuilt for the child hygiene work. Four exhibit booths and a space for the examination of the babies were fenced off. Two dressing rooms and a room for mental tests were built. The exhibit booths represented "Baby's Bath," "Baby's Food," "Baby Sleeps," "Baby Plays." Appropriate charts were grouped at the back of each booth in which correct articles for Baby's use were displayed. A nurse or dietitian was in charge of each booth.

ADA E. SCHWEITZER, M. D., *Director.*

KANSAS

THE CHRISTIAN SERVICE LEAGUE OF AMERICA

Wichita

The League has erected during the past year an administration building at the cost of about \$30,000. The second floor of the building contains the health and psychopathic clinics. The former is under the supervision of three physicians and two nurses; the psychopathic clinic, under one physician and a nurse.

The League is extending its work among teachers in the public schools; it hopes in that way to stimulate an interest in the study of the mental health of the school children in the city. It is also extending its work among unmarried mothers and infants.

GEORGE L. HOSFORD, *General Superintendent*

KENTUCKY

BABY MILK SUPPLY ASSOCIATION FUND

Lexington

Organized for summer months in 1914. Reorganized in April, 1915.

Number of trustees, six women and three men.

Our work is chiefly field work—visiting the homes and instructing the mothers and encouraging all to nurse their babies when possible. We have them on our list as soon after birth as possible until they are two years old. If not in good condition we keep them longer.

If not able to supply the milk to drink to nurse the baby or milk for the bottle baby, we put it at a price where they can afford it, and when necessary give it free.

From September 1919 to 1920 we had two hundred and twenty-six enrolled, averaging four hundred visits a month. Fifty-two clinics held.

Total number at clinics for year ending December, 1919, 540; total number births in city year ending December, 1919, 675; total number deaths under one year, ending December, 1919, 87; total number of deaths under one year under our care, year ending December, 1919, 5; total number deaths between 1 and 5 years in city year ending December, 1919, 52.

Number of babies under six months on our list, 16, all breast fed.

We hold one clinic a week when the babies are weighed and feeding prescribed by the doctor, who gives his services free. The sick babies are sent to the public health clinic or hospital. In some cases they are sent to their family doctor. In case of a mild illness our doctor prescribes. Our work is limited to our own city.

We have not made any special study of the health and care of illegitimate children. When possible we try to get support from the father for the child.

We receive from the city \$125 a month. The rest is made up by dues and special contributions.

Average number of babies fed per month, 50; average number babies receiving free milk, 13; average number babies paying full price, 2; average number paying reduced price, 35; a large percentage of our families provide their own milk. Also a large per cent nurse their babies entirely. Average number of visits a month, 400; average number at clinics a month, 31; average number home modifications taught, 4. Population of Lexington, 47,000.

We pay particular attention to the sanitary conditions of the home and are trying to improve housing conditions.

MARGARET LYNCK, R. N.

PUBLIC HEALTH NURSING ASSOCIATION

(Formerly District Nurse Association, Babies' Milk Fund Association)

Louisville

The public Health Nursing Association of Louisville, Kentucky, was organized January 1, 1920; an affiliation of the Babies' Milk Fund Association and the District Nurse Association.

I. The organization is supported privately. It has a board of trustees, composed of five men and twenty-five women.

II. The Public Health Nursing Association furnishes nurses for bedside nursing, for instructive nursing in contagious cases, for prenatal and infant welfare work. It employs a special school nurse for a school used as a teaching center for the "School for Public Health Nurses"; also, a special nurse to do work among the retarded children who are segregated into special classes in this school. This organization also supervises the six school nurses employed by the city.

III. Our staff consists of a superintendent; two supervisors who are in charge of the field work; twenty-one field nurses; eleven doctors who give their services free of charge at the clinics, two hours weekly; seven volunteers who assist with the clerical work at the clinics, two hours weekly; and two clerical assistants employed at the office of the association.

IV. Divisions of Work:

Prenatal: Clinical work is in connection with the City Hospital, three clinics weekly. Two full time nurses are given to the field work, which is under the direction of this association.

Maternal: Deliveries by obstetricians, 431; in hospital, 28; in patient's home, 403; deliveries by midwives, 5.

Infant Care and Pre-school Age: Seven centers; seven clinics weekly; preventive consultations, 320; 80 per cent of the babies under six months on our roll are breast fed.

The mental health of children from one to six years is given no especial consideration, excepting when lack of mentality is very noticeable, or when certain cases are brought to our attention through some outside agent.

E. School Age and Adolescence: We have medical inspection in the schools; seven half time medical officers; six regular school nurses and one special nurse; average time (weekly) given to school inspection, 20 hours. Average time (weekly) given to home visiting and clinics, 21 hours. During summer months the nurses do follow-up work and attend the dental clinic.

Health development classes are under the supervision of teachers. Close cooperation exists between the Health Department and the Board of Education.

Mental tests were made once on 150 retarded children segregated in class. Special cases are referred to Psychological Clinic and examined as often as is necessary. Group tests are frequently given in schools.

Nutritional Classes: Eighteen nutritional classes are held weekly under the direction of a dietitian employed by the Board of Education. Class method is used.

There is a Department of Communicable Diseases under the regulation of the Board of Health. The staff is composed of one chief medical inspector, four field nurses. Quarantine is controlled and lifted by this department. The nurses placard the houses, give special instruction in the care of patients but do not give nursing care.

A venereal clinic is conducted by the City Hospital. Patients are followed up by two special nurses employed by the city. In case patients do not follow out instructions properly, or are a menace to the public, they are quarantined.

The city has a Tuberculosis Dispensary and Sanatorium, which cares adequately for the needs of Louisville. Four nurses are employed to do the follow-up work.

The activities of our association are limited to Louisville.

There is no boarding out system in Louisville. Some children are boarded out and the homes supervised by the Children's Protective Association, a volunteer agency. The problem of caring for dependent children is not being met.

Through the efforts of the Child Welfare Committee of the Community

Council of Louisville, an investigation of the problem of illegitimate children is being made. This investigation is not complete, therefore no action has been taken to improve the conditions surrounding these children.

The Salvation Army has a home for the care of unmarried mothers during pregnancy and confinement. It also attempts to care for the children until some permanent arrangement can be made.

V. Financial.

Total budget for current fiscal year, \$38,289.50; the organization is supported by appropriations from City and County, and a community chest (Welfare League); campaign method of raising funds has been tried. Now receiving regular subscriptions through house-to-house canvass. Work done by the association is free to those who are unable to pay, a fee is asked from those who are able to pay. Amount of fee asked is 75 cents, this being the cost per visit to the association.

VI. Cooperating Agencies:

Louisville has a Children's Council.

The public Health Nursing Association affiliates with the University of Louisville and the State Board of Health, in instruction, both theoretical and practical, of the nurses in the "School for Public Health Nurses."

We supervise the school nurses for the City Department of Health and refer all communicable diseases to this department.

The City Hospital out-patient department is attended through the work done by this association and the City Hospital cooperates, to a great extent, in filling our hospital needs.

We are just beginning an affiliation with the Medical Department of the University of Louisville. The junior students are to be required to have field work with this association. This field work constitutes attendance and instruction and at our Child Welfare Clinics.

There is close cooperation between our association and other relief organizations of the city.

VII. There is a Division of Child Hygiene in the State of Kentucky.

VIII. There is no Division of Child Hygiene in the City of Louisville.

IX. The City is not zoned into health districts. Population of the City of Louisville as enumerated in the 1920 Census is 234,891.

X. As the result of activities of previous year: We find improved health among the children; no lessening of communicable diseases; but increased intelligent care on the part of fathers and mothers; increase in the number of clinics; increase in medical and nursing care; an increase in the budget for the care of children; a decrease in the infant mortality rate, the death rate of children; and a decrease in the morbidity rates of infants and children from one to six years.

XI. Statistical for the year ending December 31, 1919:

Prenatal Care: Mothers cared for during the year, 480; total number of months under care, 1,12. Total deaths of mothers during the puerperium, 1. Total infant deaths, 3; at birth, 1; during the first month, 2.

Women during pregnancy come under the care of this association generally at the eighth month (this due to the calls received through the agents of the Metropolitan Life Insurance not being able to report cases earlier, because of lack of information from patients themselves. Average case, eighth month; earliest case, third month.

Postnatal Care: Infant care. Pre-school age: Age limit, birth to 6 years. Total number under 1 year cared for, 1,143; between 1 and 6 years, 1,217.

Percentage of babies born in Louisville which have come under the care of this organization during the current fiscal year, 21.3 per cent. Total attendance during the year at clinics, 5,110. Total births in Louisville during year, 4,058.

Total deaths under 1 year: City, 378; under our care, 38.

XII. Records: Those we use show defects remedied; the character of feeding; control of environment.

XIII. Public Health Education: In connection with the Community Council we have formed a Child Welfare Committee which interests itself in all problems pertaining to the welfare of the children of Louisville; that is, health education. We are hoping to be able to gather facts through this committee that will enable to procure the necessary uplift in the care for children. On this same committee a health commission has been organized which is to make an investigation of health conditions in the State of Kentucky. We are planning in the near future for a health survey of Louisville and Jefferson County, which survey will give us an insight into the actual conditions along health lines in Louisville, and help to form an active program.

XIV. Supplemental Statement: The most interesting educational feature of the past year with this association has been the organization of a "Little Mother's League" Class, which we hope to continue to enlarge upon.

SOPHIE C. NELSON, R. N., *Superintendent*

LOUISIANA

CHILD WELFARE ASSOCIATION

New Orleans

I. Organized May, 1913.

II. Scope of Work: The association endeavors to reduce the hazard of motherhood and raise the physical standard of health among women by providing complete maternity care and offering medical and nursing supervision to mothers spent by fatigue, neglect, disease; to prevent infant blindness by prompt attention to the eyes of the new-born; to lessen illness and death among children and build up their resistive power through periodic personal supervision by nurse and physician; to control needless suffering and protect public health by offering nursing service and instructive care to the sick in their homes and by working for the correction of conditions that cause disease and death.

III. Staff: This work is carried on through a staff of physicians, dentists and trained nurses, including five colored nurses.

IV. Scope: Sick calls from any part of the city are answered, but supervisory and instructive work is limited by financial resources to certain sections of the city. In these areas a definite territory known as a "field" is assigned to each nurse. A group of neighboring fields constitutes a district, and is controlled by a district office, centrally located, to which the nurses come at least once a day to record visits, receive new calls and consult the supervisor about difficult cases. These district offices are equipped as health centers in which is offered daily opportunity for conference with physicians. The location of new fields is determined by the distribution of child deaths, which are obtained once a month from the City Board of Health and plotted on a map of the city.

Maternity Service: Mothers registered with the association for full maternity care are visited and instructed at home by a trained nurse and receive the personal supervision of a physician at clinics during the prenatal period.

At time of birth, both physicians and nurse are in attendance—and when necessary, the association furnishes bedding and proper medical supplies, gowns for the mother and layettes for the baby.

Both mother and child receive daily after-care from the nurse and not less than three visits from the physician.

To mothers under the care of family physician or midwife, Child Welfare

Nurses gladly give care and instruction in the home for months before the child is born.

Service to Children: Because infant blindness can be prevented by prompt care, and because over 50 per cent of the infant deaths in New Orleans occur during the first month of life, the association endeavors to enroll babies as early in life as possible. Reported births are obtained daily from the City Board of Health and visited within twenty-four hours, and all fields are kept under perpetual canvass to discover unreported births and newly resident families.

Care in the Homes: With the exception of the hour at the station, the nurse's entire day is spent in going from home to home, giving instruction to the mother, care to mother and child, teaching the mother by demonstration how to protect the new-born baby, how to prepare the milk formula and other foods for the growing child, how ventilate the room and utilize sunlight.

To ill children, nurses give skilled care and teach the mother how to carry out the instruction of the attending physician.

Feeding Conferences: Weekly conference for babies and mothers are held in every center by baby specialists. At these conferences, children are given thorough physical examinations to detect defects, subnormalities and incipient illness. Ill children are referred to the family physician, if there is one, and surgical cases are sent to hospitals. In all instances, follow-up work in the homes is done by nurses.

General Service: Mothers and children over six years of age are urged to attend the medical conferences provided for them at the center in order that they may have the benefit of careful periodic examination to find out what is wrong or what may be wrong, whether actual illness, or weakness that may lead to illness. Special effort is made to reach the "tired mother" in the field, whose resistive power is lowered by neglect, fatigue or disease. Through these conferences many serious conditions have been discovered and many minor troubles checked. It has been the experience of the association that the improvement in the health of the mother is always reflected in the well-being of the family.

Illness: To both adults and children nursing care during illness is supplied. Nurses will make two or three visits per day if necessary. If more constant attention is required, the case is considered institutional and is referred to the hospital ward.

Social Hygiene Clinics: The Louisiana State Board of Health has established at the Bertha Goetz Center a branch of their social hygiene service for the treatment of diseased patients under the care of the association.

Dental Service: Regular weekly supervision and treatments are offered by skilled dentists to children and to all maternity cases.

Colored Service: Through a special fund for work among the negroes, it has been possible for the association to increase this service to five nurses and three conference centers. At these centers four baby conferences and one ear, nose and throat conference are held weekly and fifteen hundred children are receiving nursing supervision.

The responsiveness of the negro mother and the great need of the negro child would warrant the immediate extension of this service if nurses were available.

MARY L. RILEY, *Executive Secretary*.

MARYLAND
JEWISH CHILDREN'S BUREAU
Baltimore

The bureau was organized October, 1913, and incorporated January, 1914, under the laws of Maryland.

Object: The object of the bureau is to secure close cooperation among the organizations working for the welfare of the Jewish children of Baltimore, by establishing a single center for the reception of all applications involving Jewish children from infancy to sixteen years of age, the investigation of all such cases, their permanent registration and their final disposition.

It is within the province of the bureau to make or have made any investigation or studies of a specific or general nature affecting the welfare of children.

Organization: The bureau is composed of two representatives (a director and the social worker), of each of the ten following agencies: The Hebrew Orphan Asylum, Hebrew Sheltering Home (orphanage), Hebrew Benevolent Society, Jewish Educational Alliance (settlement), Daughters in Israel (working girls' home), Young Ladies' Benevolent Society, Hebrew Hospital Social Service, Big Brother League, Lewis Baer Foundation (for boarding children under six years of age); and officer of the Juvenile Court; an advising psychiatrist, the staff of the Jewish Children's Bureau consisting of an Executive Secretary, Investigator, Home finder and clerical worker.

Budget for current fiscal year, \$8,400.00.

Function: The function of the bureau is the disposition of all Jewish children requiring urgent attention and social intervention, dependents, delinquents and defectives. The result of the bureau's work is effective and intelligent cooperation on the part of all Jewish child-caring agencies in the effort to solve the problems which present themselves. These problems come from many sources,—the school, courts, the home, social agencies, hospitals and interested individuals. Weekly meetings of the bureau are held, where after thorough investigation the history of the case is presented for discussion, the diagnosis made, treatment suggested and administered.

MRS. ADOLPH GUTTMACHER, *Executive Secretary*

MASSACHUSETTS

BABY HYGIENE ASSOCIATION

Boston

I. Organized 1909. The association is under the direction of a board of trustees, composed of fourteen men and eight women.

II. Scope of Work: Twenty infant welfare stations in charge of 31 nurses and doctors. Six child welfare stations (children 2 to 6), in charge of conference doctors and dietitians for home visits. Preventive and educational work by means of home visiting and weekly conferences.

III. Staff: Nurses, 1 supervisor, 31 field workers. Twenty-four doctors on part time; number of conferences, 28 weekly. On free service, 6; number of conferences, 6 weekly. Dietitians; 1 supervisor, part time; on full time, 4; on part time, 3. Volunteers, number varies from 3 to 20. Two clerical assistants.

IV. Divisions of Work: Infant Care: Number of centers, 20. Weekly conferences, 28. Percentage of breast-fed babies on the roll, under one year, 55 per cent wholly breast fed; 31 per cent partly breast fed.

Pre-school Age: Weekly clinics, 6. The mental health of children of this age is given especial care; all questionable cases are referred to the Psycho-Hospital for further examination.

Nutritional Classes: Method; class method used somewhat; individual instructions given in most cases.

Number of home visits, 2,376; by nurses, 2,110; by dietitians, 266.

Communicable Disease Control: Quarantine is controlled and lifted by the State Board of Health.

V. Total budget for the current fiscal year, \$55,650.40, exclusive of milk, which is sold at cost. The association is supported by membership dues and special contributions. Methods found most successful in raising funds, are the distribution of the annual report, and special monthly appeals. The work of the association is given free of charge.

VI. Cooperating Agencies: The city provides room for three stations; sick babies are referred to the hospitals; some post-graduate students from the medical schools act as conference physicians; nurses attend meetings of relief organizations and cooperate with them.

VII. There is a Division of Child Hygiene in Massachusetts.

VIII. There is a Division of Child Hygiene in Boston.

X. Improvements observed as a result of activities of previous year include health among children, according to reports of the hospitals; wider community interest in the health of children as manifested by increase in number of clinics and classes, 289; increase in medical and nursing care of infants and children.

XI. Statistical for the year ending December 31, 1919:

Postnatal Care: Age limit of children under care, 6 years. Total under one year cared for, 5,205. Total number between 1 and 6 years, 5,122. Percentage of babies born in the city during the calendar year, under the supervision of the association, 27.73 per cent. Percentage of babies born within the preceding year, under the supervision of the association, 25.53 per cent.

Total attendance at conferences, under two years, 48,180; from two to six years, 1,478.

Total births, 18,770. Total deaths, under one year, 1,814; among infants under care of association, 127.

Total deaths among children from one to five years, 813; among children under care of association, 54.

The development of the work of the Baby Hygiene Association during the past year indicates that it is fast outgrowing its name and becoming a Child Hygiene Association. Lack of funds is the only deterrent to a city-wide plan for the supervision of children from the time they come to us, a few weeks old, until they are discharged to the care of the school physician.

The work with the pre-school age group which was made possible in its beginning because a settlement house, alive to community needs, offered the association a worker to develop it, has grown as a child grows—"like a weed." But more money must be had before the age limit can be six years in all the twenty stations, although provision is now made for eight stations. Six are already in existence, two are soon to be opened. It is obviously a responsibility which must be met and which the community must recognize.

An effort has been made this last year to develop a feeling of responsibility toward the association among the women who benefit by the work. By the payment of \$1 a year they become associate members of the organization, which seemed a better plan than charging a fee. Since the work is educational it should be available to all as the public schools are, but since it is supported by private organization the taxation for its support must be voluntary rather than compulsory. No active campaign has been undertaken to develop membership, but there has been enough response to indicate that this is a resource as yet almost untapped.

Another development in the last year has been the use of our stations by the Harvard Medical School for the post-graduate students who are taking a year's work in pediatrics. Conference work under supervision is one of the requirements of the course and the results have certainly been valuable from the association's point of view, and, since the arrangement is to continue, we hope also from the University's point of view. These physicians have

shown a keenness of interest, both medical and social, and have been with the association over a long enough period to make them most successful as conference physicians.

Other educational work done by the association is through affiliation with Simmons College and the instructive District Nursing Association, giving field work to students in the public health course. The association also affiliates with Simmons and with the Dietetic Bureau by giving field work to the students of household economics courses.

Growth of the work is shown by comparative statistics for 1918 and 1919. In 1918, 7,061 were supervised; in 1919, 10,327. Four thousand six hundred and thirty-nine were admitted to care in 1918, and 6,080 in 1919. The total conference attendance in 1918 was 33,083; in 1919 it was 49,658. Home visits made in 1918 numbered 74,105; in 1919 they numbered 123,571.

WINIFRED RAND, R. N., *Director*

BOSTON FLOATING HOSPITAL

Boston

I. The Boston Floating Hospital, established in 1894, incorporated in 1901, is a hospital, free, supported by charity, running during the summer,—for the last year running an “On Shore” research hospital for the clinical and scientific examination of nutritional disturbances of childhood.

II. The summer work is looking after large numbers of acutely sick children, cared for as permanent patients. Also an ambulatory group, cared for during the day; including children suffering from various digestional disturbances, rickets, acute and sub-acute malnutrition, from two to eight years of age. Special work is done with acute rickets under two years of age. Instruction is given mothers in maternal feeding, artificial feeding, the training of children, how to keep children well, value of milk stations, health centers, etc., the meaning and need of a pure milk supply, care of milk in the home, contagious diseases.

Two clinics are conducted,—outpatient. One for children up to five years of age (usual family groups). Home visits are made by two nurses and general educational work done. The other clinic is for special cases that have been treated and studied at the “On Shore” department; with one volunteer worker, part time.

The school for nurses gives a two months’ careful and accurate training comprising lectures, quizzes, milk laboratory and ward supervision. The laboratories conduct a study on nutrition in its different forms.

III. Staff comprises an executive manager, physician in charge, head of department of research, superintendent of nurses, house officers (10 during summer, none during winter), 60 to 80 nurses in summer and 3 nurses in winter.

XI. Number of patients looked after yearly on the boat: 200 to 300 permanent patients, 300 to 500 ambulatory patients. In the “On Shore” department an average of 60 patients or more a year.

HENRY I. BOWDITCH, M. D., *Physician-in-Charge*

INSTRUCTIVE DISTRICT NURSING ASSOCIATION

Boston

I. Organized 1886. Association is directed by a board of trustees, composed of twenty-six women and one man, and an advisory committee of nine physicians.

III. Staff: Nurses; 18 supervisors; 125 field workers; 3 doctors on part time; 1 dentist on part time, 14 hours per week. Ten clerical assistants.

IV. Divisions of Work: Prenatal; 8 weekly clinics, directed by the Boston Lying-in Hospital and a committee under Tuft's Medical School.

Infant care; 3 centers; 126 weekly conferences. Ninety per cent of the babies on the roll, under six months, are breast fed.

V. Total budget for the current fiscal year, \$220,000. The association is supported by special contributions. The method found most successful in raising funds is a personal appeal through local committees and individuals. The work of the association is given free of charge, when necessary. A fee—if any is asked—is arranged on a sliding scale, with an average charge of seventy-five cents a visit.

XI. Statistical for the year ending December 31, 1919: Prenatal Care; total number of mothers cared for, 2,997, of whom 73 per cent were under the care of the association for two months. Total deaths of mothers, 9; during pregnancy, 7; during the puerperium, 2. Total infant deaths, 37, all of which occurred during the first month. Average registration of mothers was during the seventh month; earliest case during the first month.

Supplemental Statement:

Postnatal Care; total number under one year cared for, 5,146; between 1 and 6 years, 3,554. About one-third of the babies born in Boston came under the care of the association.

Total attendance, under one year, at the conferences, 2,809. Total births in Boston, 18,781.

Total deaths, under one year, 1,818; among infants under care of the association, 85. Total deaths among children 1 to 5 years, 713.

We grow rapidly and develop irregularly. Why do we, a district nursing association, have health centers as in Hyde Park and Brighton? Why, if we have two, do we not have thirteen? Why do we have maternity nursing in only three stations? It is because we have been pushed on by the needs of a given community to expand so as to offer what it needs most, because no coordinated health plan for the city is in existence as yet. We are looking and hoping for the guidance of such a scheme of work and are trying to see to it that no work now undertaken by us will be of a nature that will not fit into a big general scheme.

The types of work we are doing are illustrated by the following diagram.

Prenatal Patients
Maternity Patients
Well Babies

Sick Patients

All staff salaries have been increased at the rate of \$200 a year. This meant that about \$18,000 "new money" had to be secured, and it meant also that new work, in the sense of work that was to be newly developed, not the normal regular growth, had to be left to some future time to be begun.

The Legislative Committee of the Association has this year been greatly interested in a bill to "Enable the Department of Public Health to provide adequate care for mothers and children during the maternity period." The passage of this bill would help to provide the money necessary to give nursing care to the women of Boston when their babies are born.

To give the babies of Boston a fair chance, they must have five things which the District Nursing Association is capable of giving.

1. A nurse to teach the mother before the baby is born.
2. A nurse present at the time of the birth.
3. A nurse for ten days after the birth to visit and care for the mother.
4. A well-baby clinic, with nurses to visit in the babies' homes and teach the mothers. (The Baby Hygiene Association maintains such clinics in most of the districts of Boston. The District Nursing Association

maintains three in sections where the Baby Hygiene Association is not.)

5. A nurse to follow the child's progress until school age, when he comes under the care of the school nurse. For these older babies clinics should be established where a doctor would examine them once a month, and from which nurses would visit in their homes to see that they have proper care and diet.

Health teaching in homes means prevention of disease and lowering of the death rate. It is illustrated best by our prenatal nursing. Comparing the mothers who had prenatal nursing with those who did not, the study published below shows that in 1919 the infant death rate was lowered 60 per cent because this care was given.

After a mother has been under the care of a nurse for weeks before the birth of her baby it is very hard for her not to be able to call upon the nurse when she wants her most. Maternal mortality in Massachusetts during the last few years has increased shockingly.

In 1917 there were 616 deaths in Massachusetts due to childbirth, a death rate of 64 per 10,000 births; in 1918 there were 804 deaths, a death rate of 84 per 10,000 births.

In the City of Boston the maternal death rate in 1918 was 66.5 per 10,000 births, and in 1919, 66 per 10,000 births.

Report of 464 cases taken on in 1919 to be cared for by the Instructive District Nursing Association Nurses at the time of delivery.

Number of patients taken on for attendance at delivery, 464; number of deliveries attended, 371; average amount of time spent by the nurse at delivery, 3¾ hours; prenatal care given, 371 cases; deliveries attended, no prenatal care given, 93; maternal mortality, per 10,000 births, 28; infant mortality, per 1,000 births, 11.63; patients under care awaiting delivery, January 1, 1920, 93.

A three months' study of our maternity nursing shows that it is distributed as follows:

Boston Lying-In, 27 per cent of all; Jewish Women's Hospital, 2 per cent; private, 68 per cent; all others—Maverick Dispensary clinic hospitals, midwives, 3 per cent.

A STUDY OF PRENATAL AND POSTNATAL WORK IN 1919

Prenatal cases, 2,997; prenatal visits, 17,830.

Duration of Pregnancy When Admitted to Care

1 month, 0.07 per cent	5 months, 6.64 per cent
2 months, 1.44 per cent	6 months, 11.04 per cent
3 months, 2.80 per cent	8 months, 24.33 per cent
4 months, 5.10 per cent	8 months, 48.58 per cent

Cases followed to conclusion, 2,765; postnatal care given to 2,188; infant mortality, up to two weeks, 13.75 per 1,000 births; still births, 26.76 per 1,000 cases; postnatal cases, no prenatal care given, 1,616; infant mortality, up to two weeks, 33.81 per 1,000 births; still births, 48.58 per 1,000 births; prenatal care lowered the infant mortality rate, 6 per cent; prenatal care lowered the still births, 44½ per cent.

COMPARISON OF PRENATAL VISITS

1919 straight line 1918 dotted line

STATISTICAL REPORT

Patients under care January 1, 1919.....	3,207
New patients during year.....	23,582

Total number of patients.....	26,789
Nursing visits	166,522
Prenatal visits	17,830
Well baby visits	20,084
Other visits	42,832
Total number of visits.....	247,268
Fees collected from patients.....	\$18,611.26
Metropolitan Life Insurance Company visits.....	36,446

Patients Discharged

Discharged, cured or improved.....	18,921
Discharged to out-patient departments.....	313
Discharged to hospitals.....	1,085
Died	723
Discharged for other causes.....	964
Number of patients under care January 1, 1921.....	4,783

The School of Public Health Nursing has passed through its second year. The classes have been filled to overflowing. In the past year twenty-two graduates from the School have been added to the staff.

MARY BEARL, R. N., *Director*

MASSACHUSETTS SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN

Boston

Organized in 1878. The society is under the direction of a board of 21 men and 17 women.

II. Scope: Child protection in the general sense rather than merely in infancy or during the earlier years. We are supplemental then in our efforts to the American Child Hygiene Association's regular membership. In other words, we often make it possible for infant and child welfare organizations to exert their best efforts, as for instance, the question has come up for discussion as to whether we should, if necessary through court action, insist upon the straightening of the legs of a rachitic four-year-old child. We are guided by the diagnosis and the medical facilities, and when we feel that sound medical advice requires a certain procedure we are inclined to go as far as the law and public sentiment will allow us to go for the purpose of getting the very best measures taken for the child. We, however, do not wait for public sentiment to express itself but often organize and lead public sentiment for a better expression on these questions.

C. C. CARSTENS, *General Secretary*

MASSACHUSETTS STATE DEPARTMENT OF HEALTH, DIVISION OF HYGIENE

Boston

Organized 1915.

The child hygiene work of the Massachusetts State Department of Public Health is centered in the Division of Hygiene. The powers of the State in matters of this kind are advisory only, consequently its activities are educational in character. They may be summarized as follows:

1. Investigative. Under this heading, would come such studies as that of open-air schools and of midwives, to mention two carried on this year.
2. Educational. This would comprise lectures, use of motion pictures, child welfare exhibits (used in connection with "health weeks")

3. **Food in its relation to health.** Coordination of the work of various organizations in pushing various phases of the nutritional problem, urging the establishment of nutrition clinics, school lunches, etc. This is done through a whole time health instructor in foods and an unpaid, voluntary advisory committee. Our aim is to encourage the local communities to initiate their own work, and to assist them in an advisory capacity.
4. **Mouth Hygiene.** Carrying on an educational campaign in favor of preventive dentistry; aiding in the establishment of dental clinics.
5. **Rural consultation work.** Advisory clinics held by a trained pediatrician. No treatment offered.

The above work is carried on by the following force: One director of division; one trained pediatrician; a subdivision of public health nursing made up of five public health nurses; one health instructor in foods; one health instructor in mouth hygiene; one health instructor doing drafting and field work with the child welfare exhibit.

MERRILL CHAMPION, M. D., *Director of Hygiene*

THE AVON HOME

Cambridge

I. Organized 1874. The home is governed by a board of trustees, composed of six men and fifteen women, with an auxiliary board of seven.

II. Scope of Work: Our work is to help in the wisest way possible every destitute child in the city of Cambridge. We have boarding places anywhere in Massachusetts. All the children whom we take in our care are placed at board. We also have in connection with our offices a large yard where the children have gardens in the summer, and we have four rooms devoted to the neighborhood children who come to us afternoons and Saturdays. We have a lending library and teach them all sorts of games, fancy work, clay modeling, etc.

III. Staff: Dentists, one in each town where the children are boarding; social workers, seven, including the general secretary; volunteers, varying from four to ten; two half time workers for the neighborhood work; clerical assistants, 3.

XIV. We do not have a hospital or a home. We place out all our children but have started within the last year a play room, reading room and playgrounds for our children in the neighborhood. We give the children who have been under our supervision careful follow-up care when they are discharged from us.

EMMA O. STANARD, *Secretary*

VISITING NURSE ASSOCIATION

Great Barrington

I. Organized 1908.

II. Scope of work: Bedside nursing; school nursing; infant welfare tuberculosis nursing; maternity—prenatal, delivery, postnatal; eye, ear, nose and throat clinic held once a month.

III. Staff:

A. Nurses: Supervisor; 2 staff nurses; since June 1, 1920, 3; clerical assistant.

IV. Division of work: Our work includes Great Barrington, the center and five adjoining towns, population, 10,000.

V. Financial. January 1, 1919 to January 1, 1920: Total budget for fiscal year, \$6,804.01. Organization is supported by monthly and special contribu-

tions, annual "drive" and interest on legacy. The annual "drive" and monthly contributions from members of the association are the most successful methods of raising money.

Fees for services rendered: 10 cents to 50 cents per hour; \$1 for operations, deliveries, and to summer guests.

XI. Statistical: January 1, 1919 to January 1, 1920: Number of patients, 375; number of visits, 4,469.

CHILD WELFARE COMMISSION

(Formerly Holyoke Infant Hygiene Association)

Holyoke

I. Organized 1911. The commission is a department of the city. It was created by an ordinance passed by the Board of Aldermen. The members of the commission were appointed by the mayor, two members each for a period of two years, a total of six members.

II. Scope of work: Infant care; furnishing modified and whole milk of high grade, with special formulas for sick and malnutrition cases; visits to the homes by the trained nurse for supervision of the care of babies and the teaching of mothers; weekly clinics where babies are weighed and examined and mothers advised or encouraged.

Prenatal care: Instruction to expectant mothers in personal hygiene, nourishment, preparation for event and the teaching of American customs to the foreign mothers in the care of their homes and children.

Pre-school and nutrition clinics; weighing and examination of children under school age, advice to mothers and finding proper care for needy or neglected cases of subnormal children.

III. Staff: Nurses, 2 supervisors; 2 field workers; 2 part time doctors give 2 to 4 hours each week at clinics, all are on free service.; 1 dietitian; 2 laboratory assistants.

IV. Divisions of work:

Prenatal; no clinics held, one nurse on full time does all the work, under the direction of the commission.

Maternal: Number of deliveries by obstetrician, 10 in hospitals, 1 in out patient service and 23 in the home.

Infant care: Number of centers, 1; weekly clinics, 52. Percentage of breast fed babies, under six months, on roll, between 15 and 25 per cent.

Pre-school: Just starting under many difficulties. Work includes preventive consultations, and clinics and well and undernourished children. Mental health is given especial consideration by corrective work and training.

School age and adolescence: Have medical inspection in the schools; 1 full time medical officer, 2 part time and 2 school nurses. Average time given weekly to school inspection, 15 hours; average time given weekly to home visiting, 12 hours. There are special graded courses in hygiene given by teachers in the school. Medical inspection, health development and physical education departments are separate, but are closely coordinated. Thirty school children fitted to glasses during the year; 25 had tonsils and adenoids removed.

V. Total budget for the current fiscal year, \$18,678.53. The organization is supported by an annual appropriation from the city. All work done by the commission is given free of charge, excepting for the milk.

IX. Population about 65,000.

XI. Statistical for the year ending December 31, 1919:

Prenatal care: number of mothers cared for, 108; average number of months under care, 6 months. Average registration during third and fourth months; earliest case, during first month.

Postnatal care: Age limit of children under care, 2 years. Total under 1 year cared for, 579; total between 1 and 6, 30. About one-third of the babies born in the city come under the care of the commission. Total attendance at the clinic, 1,400.

Total births in city, 1,700. Total deaths under 1 year, 156; among infants under care of commission, 16.

FRED. H. ALLEN, M. D., *Medical Director*

VISITING NURSE ASSOCIATION

Springfield

I. Organized 1915. The association is governed by a board of trustees composed of nine men and sixteen women.

II. Scope: We give perinatal and postnatal care and have two nurses for maternity cases only; we have developed sick and well-baby clinics, industrial nursing, and other educational and preventive efforts; and, of course, we give the ordinary nursing care.

III. The staff consists of the director, one supervisor, who is a staff consultant, 13 field workers and one clerical assistant. Nine doctors give free services, each one hour a week for baby clinics.

IV. In the prenatal work, each field worker is engaged in it part of the time, according to the needs of her district, hence the number of hours cannot be stated. There is one supervisor, and the work is directed by the Visiting Nurse Association.

Our maternity nurses work only in the homes and only under doctors, i. e., we give no nursing service at time of delivery if a midwife is employed. Our nurses have had 200 maternity cases the past year.

For the Infant Care division we have 9 centers at each of which a weekly clinic is held, a combination of sick and well baby clinics; 75 per cent of infants under one year of age under our care are breast fed.

We have not undertaken work for children of preschool age, nor is there any such work done in the city except a nutritional clinic established by the Hampden County Improvement League. The Board of Health gives medical inspection in the school with 14 doctors on part time and 6 school nurses. These nurses give about two-thirds of their time to school inspection and one-third to home visiting. In the summer they teach classes of girls who are organized into the Home Helpers League, and they also make visits to the homes. There are no health development classes. In October, 1919, the Teachers' Club started a campaign to remedy every defect possible among children in Springfield. During the last three months of 1919 this club had over 200 defects, chiefly tonsils and adenoids, corrected. The School Department employs an alienist on full time who examines every child found to be deficient mentally.

The Board of Health has begun this fall to hold nutrition classes conducted by nurses among school children in all schools where they are needed. There is but one such class for children of pre-school age, conducted by the Hampden County League. This is by a nutrition worker. In both cases the class method is used. The average number of visits would be impossible to state for the work is only beginning.

The activities of this association are limited to Springfield.

The Hampden County Children's Aid Association cares for dependant children. It has a boarding out system, with an average of two children in a home at one time. It supervises about 100 homes. This same association is starting an Illegitimacy Conference which is designed to study and make an effort to improve conditions.

V. Our total budget for the current fiscal year was \$24,000, \$17,000 of

which was raised by the Community Chest Association. We have one week's campaign once a year in October. We ask a fee of 65 cents for nursing call and \$3 for care during labor, from people who can pay these amounts.

VI. By way of cooperation we send to the State Department of Health prenatal and postnatal letters; we aid school nurses in handling cases, and we receive the birth list from the City Clerk, and visit these babies. We hold frequent conferences with all agencies dealing with children. There is a great deal of interest on the part of the Junior Chamber of Commerce and other organizations, in child life, and we expect some more coordinated effort to grow out of this.

VII. We have a division of Child Hygiene in Massachusetts.

VIII. We have no division of Child Hygiene in this city.

IX. Population is 130,000.

X. We note a general improvement of health among babies. There is decided increase of intelligent care given by mothers, so that morbidity and mortality rates are less. The number of clinics has been increased, the amount of nursing care and instruction requested by parents has increased, and with this greater demand has come a greater budget to meet the demand.

XI. Number of prenatal patients under care last year, 524; average number of months under care, $2\frac{1}{2}$; total deaths of mothers, 2 (during puerperium); total infant deaths, 3 (at birth); month that prenatal patients come under our care, average at $6\frac{1}{2}$ months; earliest cases, at 2 months.

We cared for 1,000 babies under 2 years of age last year. This amounts to nearly one-sixth of the babies born in a year. Attendance at Baby Clinics the past year is 3,456.

XIII. Public Health Education: The Community Chest Publicity Committee, together with our association, puts over public health facts to the public through the press.

MICHIGAN

THE BABIES MILK FUND OF THE VISITING NURSE ASSOCIATION

Detroit

I. The Babies' Milk Fund of Detroit has for its object the prevention of infant mortality and the promotion of infant welfare. Organized in 1906, this organization was operating independently until 1916, at which time it became an auxiliary of the Visiting Nurse Association of Detroit. It is governed by a board of trustees, composed of three men and fifteen women.

II. Activities: Two clinics held weekly in River Rouge, for infants, pre-school and school children during the last six months of 1919. Three clinics held weekly in Hamtramck for infants, pre-school and school children during the year 1919. Breast feeding bureau organized June 1, 1920. It is the policy of the association to give milk as a temporary relief only.

III. Staff (for infant welfare): Nurses; 6 supervisors; 6 field workers; 3 part-time doctors.

IV. Divisions of work:

Infant Care: Number of centers, 3 for first six months of 1919, 2 for last six months. Number of weekly conferences, 9 for first six months, 5 for last six months. Combined preventive and sick consultations, 2,473; combination clinics for sick and well babies, 9 for first six months, 5 for last six months. Percentage of breast fed babies, under six months, on roll, about 85 per cent.

Pre-school Age: Number of weekly conferences, 9 for first six months, 5 for last six months. Combined preventive and sick consultations, 2,782. Clinics for sick and well children, 9 for first six months, 5 for last six months.

School Age and Adolescence: School nurses, 2 in Hamtramck, 1 in River Rouge.

Communicable disease control: Wassermann and luetin tests are given routinely. Positive reactions are followed by routine treatment.

V. Budget for the current fiscal year is included in that of the Visiting Nurse Association. The organization is financed through a community fund supporting fifty-seven agencies. The work that is done by the association is given free of charge.

VII. There is a Division of Child Hygiene in Michigan.

VIII. There is a Division of Child Hygiene in Detroit.

IX. The city is zoned into health districts; 8 in Hamtramck, and 2 in River Rouge. Population, 45,000 in Hamtramck; 9,822 in River Rouge.

XI. Statistical for the year ending December 31, 1919:

Prenatal care is given by the Visiting Nurse Association.

Total births in Hamtramck, 1,914; in River Rouge, 302.

Total deaths under one year, in Hamtramck, 203; River Rouge, 27; among the infants under care of the association, 18 in the two districts.

LOUISE KITSCHER, R. N., *Supervising Nurse*

Visiting Nurse Association: In 1917 a central bureau was established which has since served as the headquarters for the nursing activities of the various organizations in Detroit. The bureau is governed by an advisory committee with representatives from the different agencies.

The public health course at the University of Michigan: To help meet the need the War Emergency Board of Michigan granted an appropriation of \$5,000 to open a course of instruction in public health nursing in the University of Michigan nearly two years ago. The course has since become a part of the regular University curriculum. Sixty-five nurses have already received this instruction and are now filling positions of responsibility in various parts of the country.

Supplementing the theoretical work at the University is the field work in Detroit in connection with the Department of Health and Visiting Nurse Association. Owing to the unlimited opportunities Detroit offers for practical field work, plans are being developed for the creation of a teaching center for more thorough instruction in the practice and principles of public health nursing.

(MRS.) LYSTRA E. GREYTER, *Superintendent*

MINNESOTA

INFANT WELFARE DEPARTMENT, CONSISTORY SCOTTISH RITE MASONS

Duluth

I. Organized in June, 1911.

II. Our department does the infant welfare work of the city by holding free clinics and following up these cases as much as possible. We give home care to babies who do not attend our clinics. Layettes are furnished to needy families.

III. Staff: One supervisor who has charge of the work and also does field work, one field worker in winter, two in summer; three doctors on free service for eleven hours a week. We also have six to eight members of the Kings' Daughters' Society who volunteer their services for the clinics.

IV. Division of Work: The prenatal and maternal work are cared for by the city. Number of centers at which clinics or conferences are held, 4. Total number of weekly conferences or clinics, 4; 62 per cent of the babies under six months on our roll are breast fed.

We have medical inspection in our schools, under one full time and one part time medical officer; with six school nurses. The medical inspection,

health development and physical education departments are all under the medical inspection. Binet Simons tests are given twice a year. One nutritional class is held weekly by a dietitian. Others will soon be organized.

Communicable Disease Control: Quarantine is controlled and lifted by the Health Department. Wassermann and luetin tests are given routinely at all ages. Positive reactions are followed by routine treatment.

V. Our organization is supported by the Scottish Rite Masons. The work done is given free of charge.

VI. We cooperate with the County Child Welfare Board; Department of Health, hospitals, and relief organizations.

IX. Population of city, 100,000.

XI. Statistical for year ending December 31, 1919:

Age limit of babies under care, 3 years.

Total number of clinical cases under one year cared for, 520.

Total number of clinical cases, one to six, 318.

About 22 per cent of babies born during our fiscal year were under supervision at clinics.

Total births, 2,324.

Total deaths under one year, in city, 260; among infants under our care, 8.

Total deaths among children, 1 to 6 years, 75; in city, 7; among the children under our care, 0.

MAUD E. HOHMAN, R. N., *Supervisor*

THE INFANT WELFARE SOCIETY

Minneapolis

Founded 1910; incorporated 1913.

Budget, 1913, \$3,393.00; 1920, \$26,790.00.

Supported, since 1918, from "Community Fund."

Organization: Executive board of 19 members; 2 directors of infant and prenatal work; medical advisory staff of 5; 47 volunteers, helping at stations, about to be organized as auxiliary board.

Paid Staff: 1 executive, 2 prenatal supervisors, 9 infant nurses, 12 clinic physicians (nominal fee).

OBJECTS

To bring to every expectant mother who will not otherwise have skilled care:

Prenatal:

1. Medical examination and advice.

2. Nursing care and observation of symptoms throughout pregnancy; arrangement for care at confinement; instructions in proper preparation.

3. Adjustment of family and social problems which affect the mother's health; arrangements for care of family at confinement.

Breast Feeding:

To bring to every Minneapolis baby the "six times greater chance" which the breast-fed baby has over the bottle-fed baby.

To teach mothers that they *can* nurse their babies; that by "manual" expression" they can completely empty the breasts; that by so doing, the supply of milk is maintained and increased; that lactation may even be re-established after the milk supply has been allowed to decrease.

Infant Clinics: To urge every mother who cannot afford to consult a physician in regard to her baby while it is well, to attend clinic regularly, for advice as to proper care; to supervise all babies registered at clinic through their second year; to visit the home and instruct mothers how to follow the directions given.

METHODS

1. We have made a survey of midwives in the city, and established co-operation where possible.
2. We have affiliated with the Visiting Nurses' Association, on our prenatal programme, for training of their nurses in clinic procedure, nursing observation, and social adjustments.
3. We conduct 20 clinics weekly; 4 for expectant mothers; 16 for infant care.
4. We hold Mothers' Conferences monthly, with lecture from doctor, instruction in sewing, and social hour. We conduct Little Mothers' Clubs.
5. We visit every baby whose birth is reported, with advice and instruction as to the value of breast feeding. We continue this contact through the baby's first nine months. We are gathering statistics as to breast feeding for 1920.
6. We keep a registry of mothers who have surplus breast milk, and see that this milk is used for other babies needing it.

RESULTS

(From 1919 Statistics)

Two hundred and forty mothers supervised during pregnancy, at one station in Polish section, 1919.

Seven hundred and two visits made to these mothers.

Prenatal (work of 1 nurse): Out-Patient prenatal work of the Minneapolis General Hospital supervised during 1919. Total Clinic attendance, 821; home visits supervised, 1,126; 2 new stations opened, 1920.

Infant Clinics: Total Infant Clinic attendance during 1919, 10,369; admissions during year, 2,321; total number home visits, 14,360; total number babies registered at close of 1919, 2,961.

(From 1920 Statistics)

Breast Feeding: 5,348 babies visited, January to September, 1920; 9,481 visits made on breast-feeding propaganda; 461 mothers taught "manual expression"; 86.7 per cent babies born in January (773) still on breast July 1st, 1920.

Births, 1919, 8,183; deaths under 1 year, 525; registered at clinics, babies born during year, 2,005; deaths of infants under our supervision, 25.

NATHALIE C. RUDD, *Executive Secretary*

BABY WELFARE ASSOCIATION

St. Paul

I. Organized 1910. The association is governed by a board of trustees, composed of four men and five women.

II. Scope of work: Prenatal, postnatal. Prenatal clinics are held twice each week in our centers. Patients are examined by physicians specializing in obstetrics. Nurses follow patients in homes and give instructions during term of pregnancy. Arrangements made for institutional or home care at time of confinement. Postnatal clinics and clinics for children of pre-school age are held daily. Cases being followed by nurses in home visits.

III. Staff: Nurses; 1 supervisor; 7 field workers; 12 doctors on free service, who give two hours daily for four months each year. One social worker. One clerical assistant.

IV. Divisions of work:

Prenatal; 3 weekly clinics with obstetricians in charge.

Maternal; number of deliveries by obstetricians in hospital, 68; in patient's home, 19.

Infant care; number of centers, 2. Eight weekly clinics. Percentage of breast fed babies under six months on roll, 68 per cent.

Pre-school age; number of weekly clinics, 6; nutritional classes separate from the clinics, 1; affiliated with children's clinics, 1.

School age and adolescence; 2 full time medical officers in charge of medical inspection in the schools; 24 school nurses. Have health development classes under supervision of teachers, medical officers and nurses. All medical inspection under department of hygiene.

Communicable disease control; contagious and venereal disease under Board of Health Department of Venereal Disease.

The association has a mobile unit. Have a boarding-out system for the care of dependent children. Number of homes supervised, 35; not more than two children at a time in each home.

A special study has been made of the health and environment of children born of unmarried parents. In 1917 the Minnesota Children's Code, dealing with illegitimacy, dependency, feeble mindedness and neglect, was passed. Enforcement of these laws is vested in county child welfare boards, under supervision of Children's Bureau of State Board of Control; this board is co-guardian of all illegitimate children; three months' breast feeding law is enforced.

V. Total budget for current fiscal year, \$17,500; this does not include rent, light, heat and janitor service, which was contributed. The association until November 1, 1920, was supported by special contributions; after that date, through a community chest. Individual appeals found most successful in raising funds. The work done by the association given free of charge.

VI. Cooperating agencies: Supervising nurse of this association is also secretary of the Ramsey County Child Welfare Board. Venereal disease cases reported to state and city Department of Health. Supervising nurse gives class and field work in a public health course at the University. Cases are sent from the prenatal clinic to city and county hospital; cases needing attention are reported to the association by the hospital. We cooperate with the United Charities in all prenatal and postnatal cases.

VII. There is a Division of Child Hygiene in Minnesota.

IX. The city is zoned to some extent—5 districts. Population, 270,000.

XI. Statistical for year ending December 31, 1919:

Prenatal care; number of mothers cared for, 168. Total deaths of mothers, 2, during pregnancy. Total number of infant deaths, 4; 2 at birth, 2 during first month. Average registration of mothers during fifth month, earliest case, six weeks.

Postnatal care: Age limit of children under care, 5 years. Total number cared for, under 1 year, 1,242; from 1 to 6 years, 882; 38.7 per cent of babies born during the current calendar year, are under the supervision of this association. Same for the preceding year. Total births, 4,832. Total deaths, under 1 year, 325; among infants under care of association, 52. Total deaths among children, 1 to 6, 221; among children under care of association, 14.

XII. We have a record system showing defects remedied, character of feeding, and environmental surroundings.

XIII. Public Health Education; Ramsey County Public Health Association.

XIV. Supplemental statement: In 1910 the infant mortality in St. Paul was 12.5 per hundred. That year the St. Paul Baby Welfare Association was organized, having for its object the lessening of this death rate. There has been a steady decrease since as following figures will show: In 1911, 10.2; 1912, 9.6; 1913, 8.7; 1914, 7.9; 1915, 7.7; 1916, 6.9. The year of 1917 and 1918 showed a slight increase because of the war and the influenza epidemic. In 1917, the rate was 7.3; 1918, 8.6; in 1919 St. Paul again reached the remarkable low rate of 6.7. Educational work is done by the Baby Welfare Associ-

ation, both along pre-natal and post-natal lines. Pre-natal and post-natal clinics are held daily and a staff of nurses follow the cases closely in home visits. A special feature of the work has always been the supervision of the boarded baby. No baby is placed for boarding care except through this organization and the boarding babies are supervised after being placed. This result is brought about through cooperation with the Children's Bureau of the State Board of Control through which all boarding places must be licensed. All institutions caring for unmarried mothers report their cases upon leaving the institution and every effort is made to keep the mother and baby under supervision for at least two years or until some permanent plan is worked out in each case. This provision has tended to lower the mortality among a class of children where it has been heretofore abnormally high.

MARGARET B. LETTICE, R. N., *Supervisor and Executive Secretary*

MISSOURI

CHILDREN'S LUNCH ASSOCIATION

St. Louis

I. Organized 1914. Incorporated under the laws of State of Missouri in 1916.

Board of Trustees. An executive board of twenty-five women and an advisory board of five men.

II. Scope of work: Serving of lunches in the grade schools of the public schools. Lunch-rooms are maintained in seven schools and three applications are being considered. The work has grown gradually from one lunch-room maintained during the first year to the present number. (See supplemental statement.)

III. Staff. Volunteers: Number, about 200; number of regular hours: from 10.30 to 1.30 each of five school days. Most of the volunteers serve one day a week.

V. Financial. The association is very nearly self-supporting by the returns from the sale of food, but we receive some contributions from clubs and individuals.

The food is sold to the children as nearly at cost as can be computed.

Amount of fee if one is asked: Hot dish, 3 cents; cocoa, 2 cents; sandwich, 1 cent; stewed fruit, 2 cents; cakes and candy, at cost.

VI. Cooperating Agencies: The Board of Education of the public schools of St. Louis provides space in school buildings, builds necessary partitions and pays for gas used in cooking.

XIV. Supplemental Statement:

The Children's Lunch Association serves lunches in seven of the grade schools of the St. Louis Public Schools. It works in co-operation with the Board of Education and with the Medical Department of this Board.

Five of the schools are the same in which lunch-rooms were maintained through the winters of 1919-1920. In April, 1920, two new lunch-rooms were opened. From the opening of the first school on October 13, 1919, to the first of May, 1920, a total of 104 weeks of lunch-room service is represented, during which \$6,431.57 was expended for food. Sandwiches are served in all of these schools every day, 7,412 loaves of bread having been used. These cut into at least 44 slices each make a total of 326,128 sandwiches.

What is known as the hot dish is also served daily. This is some kind of soup, or spaghetti with tomatoes, or beans, or rice, or stew—a varied menu of which the children never seem to tire. Candy was served in all but two of the schools. The attitude of the shop keepers in the neighborhoods of the schools making it undesirable to serve candy in these schools. Chocolate covered cakes were substituted to give some sweets to the children. Graham

crackers are prime favorites and these with vanilla wafers, ginger snaps, or cocoanut bars serve as dessert. Through the generosity of the Community Kitchens Committee of the Red Cross this association obtained milk for several weeks at the cost of delivery. Part of this milk was used in making cocoa, but mostly it took the place of cocoa, the cold milk being very popular with the children.

The advance in the cost of food and the necessity for increasing the wages of the cooks, made it imperative to slightly raise the prices in the lunch-rooms. The raise was apparently no hardship since after the first panic at the idea of paying three cents instead of two cents for a bowl of soup, the same numbers were fed as before. A successful experiment was made in abandoning a uniform price at all of the schools and in making adjustments according to the needs of the neighborhoods. For instance, in one school the hot dish remained at the old price, while cakes and fruit were advanced, while in another the hot dish was advanced and cakes remained at the old scale. These adjustments were made either at the request of the principal of the school or upon consultation with him. Sandwiches were sold at a penny a piece throughout the year. It is no wonder that the helpers had to be cautioned not to spread the sandwiches too thick with jam and peanut butter and to save all the crumbs for soups. Notwithstanding the raise in prices, the treasurer's report shows a deficit for the year. Last year, with the lower prices, wages of cooks and equipment were covered, which was not the case this year.

This work is refuting the statement that is so frequently heard that the day of the volunteer is over. It represents the services of about two hundred faithful, interested volunteers. The efficiency of the whole organization depends on the sense of responsibility felt by each individual for her own part of it. The cooks, one in each school, are only ones in the organization receiving remuneration.

Nothing is possible without the cook on her job, but the food is of no use unless there is some one on hand to serve it to the children. Each day's helper is, therefore, impressed with the fact that she must be there or see that some one takes her place. The chairman of the day sees that her workers are all in their places and is in her own place to direct the work of the day. The chairman of the school feels a keen sense of responsibility in the organization of her corps of chairmen and workers and in the accuracy of her reports which are depended on to show whether the balance between the cost and selling price of the different foods served is being preserved. The chairman of the school also checks over all delivery slips, noting any changes in prices. She sends these slips to the buyer at the earliest possible moment so that the buyer is kept fully informed and can keep her account straight; that she can see whether goods have been delivered as ordered; and that on the first of the month she can check and O. K. all bills so that they may be turned over to the treasurer for payment before the tenth which is the last day of discount.

An essential feature of the work is the personal interest shown in the children by the workers. It is of the greatest importance that the confidence and love of the children be won. The foreign born children present problems in the lunch-rooms as they do in the schools and the workers embrace opportunities presented to assist in Americanizing these future citizens. The cooperation and generous interest of the Building Department of the Board of Education make the lunch rooms sanitary, clean, in fact possible.

The value of the cooperation of the principals of the schools in which lunches are served, of the members of instruction, building and medical departments of the Board of Education cannot be overestimated. They are ever ready to give freely of their council and of their help. Applications for lunch-rooms for 1920-21 have been received from three new schools and are being considered.

IRMA S. ROMBAUER (MRS. EDGAR ROMBAUER), *Secretary*

MUNICIPAL NURSES' BOARD

St. Louis

II. Scope of work: The board is engaged in tuberculosis and child welfare work. The tuberculosis work consists of (a) all follow-up work for the Health Department, (b) supervision of home, (c) arrangement for admission to the tuberculosis hospital, (d) clinic work and special diagnostic work on children. Child welfare work covers, (a) prenatal, (b) birth to second year, and (c) pre-school activities.

III. Staff: Nurses; 3 supervisors, each of whom has four health centers, and supervision of force connected with the centers; 27 field workers; 2 full time doctors; 8 part time doctors, who give 2 to 4 hours twice a week; 1 social worker; clerical assistants, 2 in field and 2 office clerks.

IV. Divisions of work:

Prenatal: Number of weekly clinics, 3; 7 nurses; 7 field workers; 2 supervisors. Work directed by medical director of prenatal clinics and superintendent of municipal nurses. Prenatal clinics started March, 1920; 205 labor cases.

Standing of child welfare clinics, July, 1920: Total enrollment, 6,500, under 1 year, 3,100; under 2 years, 1,803; pre-school, 1,597.

Infant care: Number of centers, 12; weekly conferences, 25; preventive consultations, 480. Percentage of breast fed babies under six months on roll, 80 per cent.

Communicable disease control: Quarantine controlled and lifted by the Health Department. Wassermann and luetin tests given routinely in all prenatal cases; to babies and tuberculous patients when necessary, but not routinely. Positive reactions are referred to the dispensary.

V. Total budget for current fiscal year, \$48,000; two centers supported by the Red Cross, and a gift is received from the Tuberculosis Society. The work done by the board is free of charge.

VI. Cooperating agencies: There is a Central Council of Social Agencies in St. Louis, and representatives from the board attend the monthly meetings of this council, and also call meetings. The board cooperates with the State Department of Health, city Department of Health, hospitals and other relief organizations in St. Paul.

VII. There is a Division of Child Hygiene in Missouri.

IX. The city is zoned by the municipal nurses into 18 districts. Population of city, 820,000.

X. Improvements observed as a result of activities of previous year: Increased intelligent care on part of parents very noticeable; wider community interest in the health of children is manifested by an increase in the number of clinics from 6 to 12; nurses from 15 to 27; physicians from 5 to 14. Increase in budget for care of children: In 1919, \$27,060; in 1920, \$48,000.

XI. Statistical for year ending December 31, 1919:

Postnatal care: Age limit of children under care, sixth year. Total number, under 1 year, cared for, 3,100; total number between 1 and 6 years, 3,367. About one-third of the babies born in St. Louis during current year under the supervision of the board; about one-fifth the preceding year. Total attendance at clinics, 11,274; about one-half under one year. Total births, 13,570. Total deaths under 1 year, 1,021; among infants under care of board, 136.

GRACE L. ANDERSON, R. N., *Superintendent*

NEW JERSEY

DIVISION OF CHILD HYGIENE

Jersey City

I. Organized July, 1913. Financed by municipality.

II. Activities: Prenatal, postnatal, nutritional and cooperative.

Postnatal. Technic of breast feeding: Milk modification (home demonstration); pre-school "nutritional."

Cooperative: (1) Health Bureau sanitary and contagious division, parochial and public school medical inspection, dental clinics; (2) City Hospital maternity and prenatal clinic; (3) relief agencies.

III. Staff: Ten well-baby stations; chief of division; 10 physicians, part time; 13 nurses.

Mothers' Institute: Supervisor, 4 resident nurses; record clerk; engineer; cook; cleaners; orderlies.

Mothers' Institute, Headquarters of the Division of Child Hygiene: Sick baby station; clearing station for well-baby stations; prenatal and sick baby clinic; school for mothers; lectures, courses to mothers, dietetic instruction covering period from weaning to school age; ward for sick babies.

Attendance, September 15, 1919 to September 15, 1920, 26,290; male, 14,052; female, 12,868; new babies, 2,579.

Budget, \$80,068.

M. W. O'GORMAN, M. D., *Chief*

THE BABIES' HOSPITAL

Newark

I. Organized May, 1896.

II. Scope of work: Care and feeding of children; medical and surgical service; milk dispensary; visiting nurse; consultations for well babies; clinic for sick babies.

Infant care (under 1 year): Number centers at which clinics or conferences are held, 5; total weekly conferences, 7.

NEW YORK

BABIES' WELFARE FEDERATION

New York City

I. Organized 1912. It is a federation of public and private agencies in New York City. Is governed by a board of trustees, composed of fourteen men and fifteen women.

II. Scope of Work:

The Babies' Welfare Federation, formerly known as the Babies' Welfare Association, is a federation of 172 organizations interested in child welfare in New York City.

It maintains:

An Information Bureau for:

Statistics and general information on child welfare.

Tabulation of baby health station statistics for all organizations operating baby clinics.

Information and guidance concerning approximately 450 agencies, whose work touches the welfare of children.

General information and record of all women who board and care for children.

Special and detailed information concerning 156 foster homes in constant use.

A *Clearing House* for cases in order that immediate care may be available for every child and the nurses and social workers thus aided may have time to reach a larger number of children; 14,749 children were referred during 1919 by workers representing 176 different organizations.

Standing Committees on:

Health stations.

Hospitals and dispensaries.

Temporary care of babies and children.

Social service.

Educational publicity,

Which have met to consider standards, the development of cooperation, the elimination of overlapping of work, the discussion of problems and other matters of common interest.

A directory of all child welfare agencies, health station directory cards, standards, forms, transfer cards, etc., are published and distributed. Surveys are made for the information of the Standing Committees and organization interested. Local district meetings are held to co-ordinate the work among the organizations in the field and to map out plans of possible cooperation.

III. Staff: Two social workers, 1 assistant, 1 clerk, and 1 stenographer.

IV. Divisions of Work:

School age and adolescence: Medical inspection of the schools is under the Bureau of Child Hygiene of the Department of Health, with four full time and 94 part-time medical officers, and 221 school nurses. The medical inspectors give 15 hours weekly and the nurses 25 hours weekly to school inspection; medical inspectors give 5½ hours weekly and the nurses 8 hours weekly to home visiting. During the summer months the nurses visit and instruct mothers in the care of babies to aid in the reduction of infant mortality. The medical inspectors and nurses cooperate with the teachers by aiding in filling out records and advising exercises for special cases; 116,016 defects were corrected during the year 1919.

Communicable disease control: New York City has a well-organized Bureau of Preventable Diseases, which is responsible for the isolation, quarantine and sanitary supervision of infectious disease cases, as well as education and other prevention activities. Quarantine cases are cared for by a general group of nurses of the Bureau of Preventable Diseases.

Illegitimacy: A special study was made to ascertain the approximate number of illegitimate children in New York City and the attitude of a group of unmarried mothers towards the proposed registration for the protection of the children born out of wedlock. This study was made under the direction of the local committee of the Intercity Conference on Illegitimacy.

Plans have been made to follow up this study by a series of conferences with the organizations handling this problem.

V. Total budget for current fiscal year, \$11,575. The federation is supported by membership dues and special contributions. Appeal letters have been used almost exclusively in raising funds. No charge is made for services rendered by the federation.

VI. Cooperating agencies: The federation acts as a central council for all children's work. It is composed of the other organizations in New York City, who are members and qualified to vote and take part in all plans of administration.

VII. There is a Division of Child Hygiene in New York State.

VIII. There is a Division of Child Hygiene in New York City.

IX. New York City is zoned for baby health station work, there being 73 districts. Population, 6,141,445.

X. Improvements observed as a result of activities of previous year: Improved health among children, indicated by decreased death rate. Slight increase in diphtheria and whooping cough, but marked decrease in tuberculosis. Infant mortality rate decreased to 81.6.

XI. Statistical for year ending December 31, 1919: Total number of births, 130,377. Total deaths under one year, 10,639. Total deaths among children, 1 to 5 years, 5,105.

MARY ARNOLD, *Executive Secretary*

VISITING NURSE SERVICE, HENRY STREET SETTLEMENT

New York City

Activities: Nursing care of the sick in their homes.

Number of patients cared for in 1919.....	35,433
Number of visits made in 1919	272,100
Average number of nurses during 1919.....	162
6,007 patients under 1 year.....	182 deaths
1,461 patients under 2 years.....	87 deaths
2,796 patients, 3 to 5 years.....	63 deaths
5,069 cases puerperium.....	1 death
424 cases pregnancy	0 deaths
170 cases accidents of pregnancy.....	1 death
44 cases puerperal septicemia.....	1 death
20 cases other puerperal diseases.....	0 deaths

In sections where intensive maternity protective work was done, the staff nurses assisted with 680 deliveries in the homes.

During the year, prenatal work has been developed and in cooperation with the Bronx Chapter of the Red Cross, three maternity clinics in charge of staff nurses are being conducted each week in this section.

A Health Center, financed by the Red Cross, is being administered and staffed with Henry Street Settlement nurses, also in the Bronx.

Diagnostic, nutritional and dental clinics are being planned as well as the extension of the maternity service, so that eventually attendance at delivery may be assured throughout our service.

Cooperating with three other community organizations, our nurses assist at diagnostic clinics for children of pre-school age and do the follow-up work as well.

The maternity work has developed perhaps more extensively than any other feature of the service. A study of 4,638 cases is enclosed. It may be of interest to note that from January, 1915, to January, 1920, the Henry Street Settlement staff cared for 19,266 maternity cases with no deaths; 193 cases of puerperal septicemia, with 2 deaths; 939 abortions, with 1 death; 837 cases of other puerperal diseases, with 3 deaths.

Four baby welfare stations have been conducted in outlying districts of the city in sections not covered by the Department of Health. The reports for the past year are very misleading because during the severe winter weather the clinics were deserted.

During the summer a home for convalescent children up to 6 years of age was conducted and large numbers of children often accompanied by mothers sent on day outings, as well as to country places for a longer stay.

Study of 4,683 maternity cases with 4,438 living births:

Infant Mortality: Number of infant deaths (under one month) per 1,000 cases, where prenatal care and supervision have been given, 9.8.

Number of infant deaths (under one month) per 1,000 cases, where care and supervision have been given during postnatal period only, 14.2.

City death rate per 1,000 cases of all infants under one month, 37.

Maternal Mortality: Number of deaths from diseases incident to child birth per 1,000 cases of women who have been supervised and cared for during prenatal and postnatal periods. None recorded; 5 left Settlement supervision and were removed to hospital; 5 cases of septicemia, 1 eclampsia.

Number of deaths from diseases incident to child birth per 1,000 cases of women to whom only postnatal care and supervision have been given. None recorded; 6 patients removed to hospital; 17 cases of septicemia.

Miscarriages and Abortions: Number of miscarriages and abortions per 1,000 cases under prenatal care, 6.8.

Number of miscarriages and abortions per 1,000 cases reported for postnatal care only, 35.7.

Still Births: Number of still births per 1,000 cases under prenatal care, 21.

Number of still births per 1,000 cases reported for postnatal care only, 34.5.

JESSIE ROGERS, R. N., *Assistant Director of Nurses*

NATIONAL CHILD WELFARE ASSOCIATION

New York City

Organized 1912. Board of Trustees, 6 men and 4 women.

The aims and methods: To keep in touch with the progress of child welfare, both legislative and social, and to cooperate with all organizations having child welfare for their object.

To produce posters, pictures, educational panels and other graphic material for educational and campaigning purposes in order to promote child welfare, and to assist every form of social service that directly or indirectly affects the welfare of children.

To publish books and pamphlets on the various phases of child care and training.

To provide speakers and lecturers on child welfare.

To aid in the organization of community-wide exhibits for the promotion of child welfare.

To assist communities in framing programmes for cooperative child welfare work.

(MRS.) EDITH D. MINOR, *Information Secretary*

NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING

New York City

The functions of two sections of the National Organization for Public Health Nursing ally them with the American Child Hygiene Association.

At the convention in Atlanta in April, a Section on School Nursing was formed. Owing to the illness of the Chairman, the work of this Section has not been gotten under way, and there is nothing to report from that Section.

A Child Welfare Section was formed and Miss Rand elected Chairman. Owing to illness she was unable to accept that election, and the Vice-Chairman automatically acted as Chairman. At the time of its formation the Section voted upon two definite pieces of work to be undertaken at once, and authorized the Chairman to appoint a committee for each task.

1. To study teaching methods and equipment for use in work with the pre-school child.

2. A committee to standardize the terms which should appear on records of work with the pre-school child, with a view toward suggesting a record

which could accompany the child to school and give the school health officer an accurate picture of that child from the prenatal period to school age.

These two committees have been appointed but the work of neither is sufficiently advanced for a report. It is hoped that a report from each of these two committees may be ready before your next annual meeting.

ANNA A. STEVENS, R. N., *Delegate*

NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR

New York City

I. Organized 1843. Governed by a board of trustees, composed of thirty-three men and seven women.

II. Scope of Work: This is a private organization which combines the administration of relief with public health work. Believing that sound health is the best preventive of poverty the association aims to provide the following services for families under its care:

1. General educational nursing.
2. Prenatal and postnatal care for mothers and babies.
3. Country outings for tired mothers and anaemic children, and a convalescent home for the recovery of mothers after child-birth.
4. Scientific training in the proper selection and preparation of food.
5. Medical and nursing care for tuberculous families in their own homes.
6. An intensive community health program in one of the city's most congested districts.

III. Staff: Four supervising nurses; 31 nurses as field workers; 4 part time doctors, who give 12 hours per week; 4 part time dentists, who give 45 hours weekly; 28 social workers; 8 full time dietitians; 50 clerical assistants.

IV. Divisions of work:

Prenatal; 1 weekly clinic with obstetrician in charge. A nurse is assigned from the regular staff at each clinic. Each of the field work nurses do some prenatal work; 3 supervisors. Work directed by the Bureau of Educational Nursing of the association.

Maternal; number of deliveries by obstetricians in hospital, 159; in out-patient service, 219; in patient's home (by private physician), 41. Number of deliveries by midwives, 431.

Pre-school ages; number of weekly clinics, 6; all work is preventive. Number of nutritional classes, 8.

Nutritional classes; number of weekly classes for school children, 8; for pre-school children, 4. Conducted by physician who cooperates but does not supervise. Nurse cooperates in the removal of physical defects. Dietitian conducts class and makes home visits. Both individual and class methods are used. Average weekly number of home visits by dietitian, from 40 to 50.

In the association's relief department food, shelter, help and advice are provided for needy children of widowed mothers.

V. Total budget for the current fiscal year, \$950,000.00. The association is supported by membership dues and special contributions. Written appeals most successful method in raising funds. . No charge is made for the work done.

VI. Cooperating agencies. (2) The association cooperates very closely with various bureaus of the City Department of Health, particularly as to such matters as the attention to defects of school children, in the dental program for school children, in the work of the public health stations in the districts, where it is doing dental work. The association receives daily notices from the Bureau of Contagious Diseases as to the location of cases of contagious diseases.

3. Hospitals: The association uses to the limit the existing facilities in the hospitals, clinics and dispensaries. In our nursing work we are addressing ourselves to the removal of physical defects and the treatment of sickness and disease and this necessarily involves the securing of hospital, clinical and dispensary care for such cases. We also assist the hospitals in some of their out-patient work. In one of the colored districts of the city our nurses are following up in the home treatment of syphilitic cases under the supervision of the Vanderbilt Clinic associated with the College of Physicians and Surgeons. We have very close cooperation with all of the leading hospitals of the city, particularly Bellevue, Gouverneur, Vanderbilt, Nursery and Child's, New York Ophthalmic, New York Eye and Ear, New York Orthopaedic Hospital.

4. Medical Schools: The association cooperates with Vanderbilt Clinic which is related to the College of Physicians and Surgeons. We also cooperate with the dental college of Columbia University, particularly with the School of Oral Hygiene. Last year in our dental work we secured the services of their undergraduate students for a period of six weeks in making prophylactic cleaning for about 1,600 school children.

5. Relief Organizations: The association has a Bureau of Relief which last year dispensed \$344,993.13 in relief. We also cooperate with other relief organizations which are handling families in which we are interested.

6. Private groups: Cooperation of private groups is intended, I take it, to include such groups of social settlements, neighborhood associations, etc. In our relief and nursing work we have close cooperation with these different groups.

7. Nursing: In our prenatal work we work under the supervision and in close cooperation with the Maternity Center Association of this city and we also have cordial relations with other nursing groups, such as the New York Diet Kitchen Association and the Henry Street Settlement nursing service.

VII. There is a Division of Child Hygiene in New York.

VIII. There is a division of Child Hygiene in New York City.

IX. City is zoned into 712 health districts.

Population, 6,006,794.

X. Improvements observed as a result of activities of previous year: Improved health among children. Vital statistics indicate that there has been a steady reduction in the number of some of the most serious communicable diseases. Increased intelligent care on the part of parents. Wider community interest in the health of children as manifested by increase in number of clinics, medical and nursing care, and a decrease in the infant mortality rate and death rate of children.

XI. Statistical for the year ending December 31, 1919:

Prenatal care: Number of mothers cared for, 1,576. Average number of months under care, 7. Total deaths of mothers, 14; 7 during pregnancy, 5 at child birth and 2 during the puererium. Total number of infant deaths, 19; 3 at birth and 16 during first month. Average registration of mothers during fourth month; earliest case, fourth to sixth month.

Postnatal care: Age limit of children under care of association, 16. All cases under one year referred to Baby Health Stations. Number from 2 to 6 under care of association, 3,515.

Percentage of babies born in New York during calendar year, under supervision of association is very small, less than 1 per cent. In the community health work, the association is doing a very intensive piece of work in a district of 40,000, and is now in touch with approximately 50 per cent of the births in that district. During the calendar year 1919, there were 1,045 births in this district, and for the year 1920, 505 births.

Total attendance at clinics of children from 2 to 16 years, 3,001.

Total births in New York City, 130,378. Total deaths under 1 year, 10,639.

XI. Record system: Association has a continuous record of child, indicating defects remedied, character of feeding and environmental surroundings.

JOHN C. GEBHARE, *Director Department of Social Welfare*

NEW YORK DIET KITCHEN ASSOCIATION

New York City

I. Organized 1873. Governed by a board of trustees of thirty-six women, and an advisory board of twelve men.

II. Scope of work: Activities are centered in the health conservation of the entire family group with special reference to mothers and babies; 8,071 babies, 6,780 mothers, 882 expectant mothers, 1,695 children between 2 and 6 years, and 899 social service cases were registered during the last year. In the same period, 733,394 quarts of pure milk were dispensed at cost. In the centers the doctors, nurses and their assistants instruct actual and prospective mothers and hold conferences for babies, and children of pre-school age, while additional medical and surgical attention is secured through affiliated organizations, cooperating hospitals, dispensaries and other health agencies. These center activities are supplemented by home visits through which further instruction is given, health supervision maintained and help rendered with family problems.

III. Staff. Nurses: Two supervisors; field workers, 12 nurses and 9 nurse's assistants. Eight part time doctors, who give 24 hours weekly; 17 free service doctors, who give 25 hours weekly. Dental work done through co-operation with dental clinic. Fourteen volunteer social workers. One part time dietitian; 17 volunteers, including 3 students at Teachers' College.

IV. Divisions of Work:

Prenatal: Service carried on by two nurses of the association staff and through co-operation with other agencies providing prenatal care.

Maternal: Number of deliveries by obstetricians in hospitals, 62; in out-patient service, 68; in patient's home, 33. Number by midwives, 53.

Infant care (under 2 years): Number of centers, 8. Number of weekly conferences, 25. Percentage of breast fed babies under six months on roll of association, 65 per cent.

Pre-school age (2 to 6 years): Number of weekly conferences, 8; nutritional classes separate from conferences, 2; affiliated with children's conferences, 2. Each pre-school age child has a thorough physical and mental examination on admission and is referred to mental hygiene clinic when necessary.

Nutritional classes: Number of weekly classes for pre-school children, 2, conducted by 2 physicians, 2 nurses and 1 dietitian.

V. Total estimated budget for fiscal year, \$137,078. This includes milk expense which is covered by milk receipts. Organization is supported by membership dues and subscriptions, appropriation from the city and special gifts and contributions. All work is given free of charge.

VI. Cooperating agencies: Effective cooperation is maintained with the Bureau of Child Hygiene of the Department of Health and with such other organizations as in any way enter the same field of work.

XI. Statistical for the year ending December 31, 1919:

Prenatal care: 882 prenatal mothers registered at the centers during the year.

Postnatal: Age limit of children under care of association, 6 years. Total number under 2 years cared for, 8,071; total number between 2 and 6 years, 1,695. Total attendance at consultations, under 2 years, 45,190, from 2 to 6 years, 3,291. Total deaths among infants under care, 80.

XII. Record system: Continuous record of child kept, indicating defects remedied, character of feeding and environmental surroundings.

XIV. Supplemental Statement:

The new work undertaken by the Association during the past year was the establishment of a consultation bureau for parents, and while that is fast proving its great value it is still in its infancy, and the really important advance made was in the expanding and strengthening of the pre-school age activities which have been carried on for some years at the centers.

With the return of many doctors to civil life it was possible to provide really adequate initial and return examinations for the children registered at the centers also to secure greatly improved service at the dispensaries and hospitals for those cases requiring medical or surgical attention. In addition nurses specially assigned for work with the children were appointed to the staff, so that the large amount of "follow-up" work necessitated by the examinations might receive proper attention, and these nurses not only help the mothers in carrying out the doctors' instructions in the homes, but arrange for treatment when necessary elsewhere, and assist the doctors when the children's conferences take place.

Another most important factor in upbuilding this branch of the Association's service has been the addition of a dietitian or nutrition teacher, who works in connection with the doctors and nurses at the conferences, prepares special menus for diets needed and instructs the mothers in the proper selection and preparation of food. She also conducts classes for mothers and "little mothers" at the centers and in the homes where in many instances she has been able to readjust conditions to a systematic plan of living based upon a budget in accordance with financial resources and physical requirements.

This particular phase of the work has produced such markedly good results that it is planned to extend it as rapidly as possible by adding other workers, as so large a percentage of the children examined can immediately benefit by such a service.

Another step has been the revision of the records for this class, and those now used carry the report of the dietitian's work, as well as the notes of doctors and nurses, and the results of examinations and treatment.

MARIA L. DANIELS, R. N., *Superintendent*

THE AMERICAN NURSES' ASSOCIATION

Rochester

The American Nurses' Association, founded in 1897, and having 35,800 members, is made up of the membership of forty-seven state nurses' associations. Our work for child hygiene is indirect.

KATHARINE DE WITT, R. N., *Secretary*

CHILD WELFARE COMMITTEE

Syracuse

Organized September, 1918.

I. The Child Welfare Committee is a private organization which grew out of the interest and activities of the Child Welfare Department, Women's Committee of the National Council of Defense. Combining forces in September, 1918, with the Associated Church and Charities, the Red Cross, the Visiting Nurse Association, the Onondaga County Tuberculosis Committee, the Public Health officials and numerous public and private organizations interested in children, it constitutes a strong force of 12 men and 21 women consisting of physicians, city officials, social workers and others particularly experienced in problems affecting the health of children whose object it is to reach the community and to improve the health and the welfare of the children of Syracuse.

II. Scope of the Work:

1. Prenatal: Supervision and instruction of prospective mothers; necessary medical care secured through cooperation.

2. Baby Welfare Work: In cooperation with the Bureau of Child Hygiene, Department of Health, maintains eight Baby Health Centers; eight baby conferences each week with a doctor and trained nurse in attendance. The activities also include home visits by nurses, Little Mothes' League classes, dispensing of milk to needy families, arrangements made by cooperation for the care and treatment of sick babies and children of pre-school age.

3. Milk and Child Health Campaign: Conducted during the week of May 3 to 8; talks by Child Health Organization clown, Cho-Cho, to groups of school children; prize essay and poster contests among school children; weighing contests; milk bar in ex-saloon in business section; health propaganda by means of newspaper publicity, posters, exhibits, speakers and slides in moving picture houses.

4. Summer Camp: Maintained for ten weeks; cared for 160 undernourished school children.

5. Field Study and Report of Health Conditions in Syracuse as Affecting Children, by Dr. Lydia Allen deVilbiss of the U. S. Public Health Service.

6. Special care of undernourished school children in nutritional clinics and open-air classes.

7. Study and improved reorganization of recreational facilities.

8. Relief and improved home and district conditions secured by co-operation.

III. Staff: Three nurses and 3 nurses cooperating in Department of Health; 7 doctors on free service and 1 paid doctor directing Bureau of Child Hygiene, Department of Health; 1 paid social worker; 2 dietitians from the Syracuse Home Bureau co-operate actively; 4 volunteer clerical assistants at the Infant Welfare Stations one hour a week; 2 interpreters.

IV. Divisions of Work:

Prenatal: We refer cases to the prenatal clinic of the Syracuse Free Dispensary of Syracuse University. Three infant welfare nurses and 3 infant welfare nurses cooperating in the Department of Health and one special prenatal nurse cooperating in the Visiting Nurse Association supervise and instruct prospective mothers.

Maternal: Secure necessary medical and nursing care for confinement by cooperation with the out-patient obstetrical service of the Syracuse Medical College and with the Visiting Nurse Association.

Infant Care (under 3 years): Four centers and 4 centers cooperating in the Bureau of Child Hygiene, Department of Health; 8 weekly clinics for well babies.

Pre-School Age: We have no clinics for children from 3 to 6 years. Our nurses refer cases which they find need correctional care to the Children's Clinic of the Syracuse Free Dispensary or to their family physicians.

School Age and Adolescence: Medical inspection in schools, 12 part time medical officers in Department of Education and 2 part time medical officers in Department of Health; 12 school nurses in Department of Education; 3 school nurses in Department of Health; average time (weekly) given to school inspection, 30 hours; average time (weekly) given to home visiting, 15 hours. During summer months school nurses do follow-up work and special work. Health development classes under supervision of nurses. Medical Director co-ordinates Medical Inspection, Health Development and Physical Education Departments.

Defects corrected during year, 1,919.

Department of Education, 4,955.

Nutritional Classes: Sixteen weekly classes for school children conducted by school nurses; one weekly class for school children conducted by physicians,

assisted by dietitian. Class method is used. Activities are limited to our own city.

V. Total budget for the current fiscal year, October 1, 1919 to October 1, 1920: \$7,844.69. Supported entirely by voluntary contributions from private individuals. Finance committee makes special appeal to private individuals. Work is free of charge.

VI. Cooperating Agencies:

We have no Children's Council.

Representatives from every organization doing any kind of child welfare work are members of our Committee.

We receive bulletins, publications and literature on child hygiene from the State Department of Health. Also send reports from our infant welfare clinics. Co-operate actively wherever possible. City Department of Health has same plan of organization of baby health centers; we exchange reports of work at baby health centers; confer on matters of policy; close cooperation in all matters of child hygiene.

Senior students of Syracuse Medical College actively cooperate in prenatal and obstetrical work under supervision of medical college faculty.

Active co-operation with all relief organizations for families under our care.

Cooperation with Visiting Nurse Association, Society for Prevention of Cruelty to Children, Home Bureau, International Institute, Americanization League, Day Nursery, Free Dispensary, Red Cross, etc.

Employ graduate nurses only in child welfare work.

VII. There is a State Division of Child Hygiene in New York.

VIII. There is a city Division of Child Hygiene in Syracuse.

IX. City is zoned into 6 health districts.

Population of city, 171,717.

X. Activities of previous year have resulted in improved health among children, lessening of communicable diseases and increased intelligent care on the part of fathers and mothers. Increase in number of clinics, medical and nursing care, and budget for care of children.

Infant mortality rate in 1918, 119; infant mortality rate in 1919, 90; decrease in death rate of children; decrease in morbidity rates of infants.

XI. Statistical, for year ending December 31, 1919:

Postnatal care: Age limit of babies or young children under care, 3 years; total number under 3 years enrolled at stations, 1,163; total attendance during the year at clinics under 3 years, 2,904.

Total births, 4,157.

Total deaths under 1 year: In Syracuse for years ending December 31, 1919, 357; among infants under our care, 6.

XIII. Public Health Education:

A call is made by either nurse or worker on every new mother in Syracuse to give her health facts with reference to herself and her baby and to acquaint her with all the facilities that are available to her in the city to learn how to keep her baby well and how to safeguard the health of her family.

Our Milk and Child Health Campaign was most effective in bringing before the community, especially parents and children, health facts.

Further health propaganda for children has been carried on by means of speakers at meetings of men's and women's organizations, newspaper publicity, public demonstrations of Little Mothers' League work, and various other forms of publicity as seems practicable.

XIV. Supplemental Statement:

Our most significant piece of work during this year has been the extension of our baby welfare work.

At the beginning of this year we had in operation three infant welfare stations—two financed by our committee and one financed by the city Depart-

ment of Health. During the year we have organized four additional centers and the Department of Health has organized one other station. We have also succeeded in arousing increased interest in preventive health work for babies so that the bulget of the Department of Health was enlarged in order to include provision for additional infant welfare stations. Consequently the department of health was able to take over two of the centers that we had organized and has organized an additional center which in addition to the one station previously financed by this department makes a total of four infant welfare stations under the Department of Health.

At present our committee maintains four infant welfare stations which in addition to the four now maintained by the Department of Health makes a total of eight centers as compared with three in the previous year.

There still remain some districts of the city which can not be conveniently reached by the work of the infant welfare stations. We are hoping to organize enough stations during the coming year to place within the reach of every mother who needs help, the opportunity of availing herself of the services of an infant welfare center.

At our infant welfare stations are held weekly clinics for well babies under 3 years of age; the object of these clinics is to instruct the mother in the feeding and general care and hygiene of the baby in order to prevent disease and to keep the baby well.

Staff: Nurses: Six station nurses; doctors, 7 volunteers, 1 doctor directing. Bureau of Child Hygiene, Department of Health: Social workers, 1; volunteer aides, 4; interpreters, 2.

Special Features of Work: Baby conferences, home visits by nurses, Little Mothers' League classes, arrangements made by co-operation for the care and treatment of sick babies and children of pre-school age, dispensing of milk to needy families.

TILLIE WINKELSTEIN, *Executive Secretary*

VISITING NURSE ASSOCIATION

Watertown

I. Organized 1896.

II. Scope of Work: Care of the sick poor of Watertown.

IV. General Work: Average number of cases cared for per month, 75; number of appeals for sick care, 1,070; number of office visits, 2,180; number of home visits, 1,497; number given hospital care, 76. Conference with mothers and babies at stations, 63 afternoons; 19 pre-school age clinics held; 58 children registered; a physician in charge whose services are given. Service of specialists given at the eye, nose, throat and ear clinic; 70 cases cared for, 48 pairs of glasses furnished. This clinic only opened October 18, 1920; 17 prenatal clinics held; 21 patients, 107 home visits, physician in charge whose services are given. Baby welfare clinics for sick babies; 31,265 babies, registered. Services of specialist donated; 1,467 home visits.

V. Total budget for fiscal year, \$5,688.64. Organization is supported by private contributions, and an appropriation from the City Board of Health.

OHIO

BABIES' DISPENSARY AND HOSPITAL

Cleveland

I. Activities in existence before October 1st, 1919, and still carried on:
(a) "Sick" Dispensary for ill infants under 3 years of age of needy parents.

(b) Responsible for supplying all of the patients coming to the Babies' Dispensary and to the Prophylactic Babies' Dispensaries of the Department of Health with milk of various kinds, and for meeting the deficit caused thereby.

(c) Training of medical students in pediatrics, by giving to the seniors an opportunity to do active work in the sick Dispensary daily for eight consecutive weeks, and by using the material once per week throughout the year for didactic and clinical lectures to juniors in the fundamentals of pediatrics. In addition, the milk laboratory is used to give the seniors in groups experience in making different foods.

(d) Postgraduate experience in pediatrics for physicians in Cleveland who wish to improve their training in this field.

(e) Postgraduate training for public health nurses in pediatrics, in cooperation with the University District Training Center and with Western Reserve University.

II. Activities begun since October, 1919:

(a) Traveling automobile dispensary for children up to six years of age. This automobile was originally given to the Children's Year Committee by Mr. and Mrs. A. S. Chisholm, and later transferred, after the death of Mr. Chisholm, by Mrs. Chisholm to the Babies' Dispensary and Hospital, inasmuch as the Children's Year Committee had disbanded and, therefore, could not be responsible for the truck.

According to the plan laid out ten villages and small towns and cross-road corners were visited one or two times per month by the truck.

Miss Hope, Superintendent of Nurses, made it possible for Miss Black, a member of the Babies' Dispensary staff, to assume the nursing responsibility during the period of truck service, namely, from June 1st to October 1st, and Dr. J. E. McClelland, also of the Babies' Dispensary staff, was in charge of the clinics as medical director.

On the whole, the work was considered satisfactory. Some communities did very well; others poorly; the latter mainly because of the absence of an enthusiastic local lay worker. It is hoped that some of the communities will establish permanent infant and child welfare work as a result of the automobile-clinic visits to their community.

(b) On January 16th, 1920, the S. M. A. Milk (Synthetic Milk Adapted), which has been in the process of development since 1913, was made available for every practicing physician in the city of Cleveland and the surrounding territory. The use of the milk by the practitioner has increased markedly, owing to the general satisfaction of the simplicity of the food and the good results obtained.

(c) During July, 1920, a dental clinic was added to the facilities of the Dispensary for children under six years of age.

III. Plans for the coming year:

(a) During the present year an attempt was made to establish vaccination against diphtheria in the Babies' Dispensary, and in most of the Prophylactic Dispensaries of the Department of Health. It was, however, not possible to get the necessary financial endorsement, but it is definitely expected that this will be obtained during October, 1920. According to this plan, twelve dispensaries will be visited eight times during the year on one day for three consecutive weeks, making a total of twenty-four days for each of the twelve dispensaries where the prophylactic injection against diphtheria can be made. At the same time it is planned to combine with this work supervision of the pre-school child, which activity, owing to the lack of funds and lack of nurses, has not been developed even though it was on the definite program of the Bureau of Child Hygiene since 1912.

IV. Activities previously established but discontinued during 1919-20: Owing to the acute shortage of nurses, it was impossible, during the sum-

mer of 1920, to open the Out-Door Ward. It is hoped, however, that the condition causing this unfortunate incident will not operate again.

H. J. GERSTENBERGER, M. D., *Medical Director*

BUREAU OF CHILD HYGIENE, DIVISION OF HEALTH

Cleveland

The Bureau of Child Hygiene of the Division of Health has not made many changes in the work in the past year. New work consists of inspecting Maternity Hospitals and passing on their applications for a state license.

Special eye nursing has been discontinued, and all nursing in the Division of Health is now being done on the generalized plan.

A beginning in the prosecution of doctors for failure to report births has been made, one doctor being fined \$25 and costs recently. On our suggestion, the chief of the Division of Medical Inspection of the Board of Education urged the adoption of a rule requiring birth certificates for children admitted to kindergarten or first grade for the first time. The rule went into effect before the fall term in 1919. Both last year and this year, several thousand of the new school children born in Cleveland were thus found to be unregistered. The exact number has not been tabulated.

Total number of deaths under 1 year for 1919, 1,743.

Total number of living births for 1919, 18,785.

Infant mortality rate for 1919, 92.8.

Budget for present fiscal year, \$80,304.00.

R. J. OCHSNER, M. D., *Chief*

DAY NURSERY AND FREE KINDERGARTEN ASSOCIATION

Cleveland

I. Organized 1882. Incorporated 1894. Board of Trustees, composed of 7 men and 50 women.

II. Scope of Work:

The association maintains five day nurseries, four kindergartens. Children of any nationality, race or religion are cared for. Sliding scale of fees, from ten to fifty cents, according to the budget of the family. Medical and dental care. Nurseries open from 6:30 to 6, except Sunday, legal holidays, and Saturday afternoons. Classes for mothers in sanitation, dietetics, and nursing. Classes for children in handmade toys, dancing, cooking. Playground directors.

Purpose: To foster a self-supporting spirit among American families; to maintain the unity of the family if possible; to discourage mothers from going to work unless the family budget makes it imperative; to secure health to the children by medical and dental supervision, and correction when necessary; to foster and direct the spirit of play among children and to provide recreation and instruction for mothers.

III. Staff: Five nurses; 1 physician on part time; 1 dentist on part time; 105 volunteers.

IV. Divisions of Work:

Pre-school age; number of weekly clinics, 5; number of nutritional classes separate from the clinics, 1 for mothers. The mental health of children (1-6 years) is given especial consideration through kindergarten in connection with nurseries and with playground directors.

The association has a mobile unit in service.

V. Total budget for current fiscal year, \$80,194.00. The organization is supported through a community chest and endowment. Most of the work

done is free, but if a fee is asked, it is a sliding scale, according to ability of family, from 10 to 50 cents.

VI. Cooperating agencies: There is a Children's Council in Cleveland. The association has daily communication with the clearing house for all welfare organizations of Cleveland, and cooperation, where necessary, with the Associated Charities, Humane Society, Legal Aid Society and other agencies. The association has aided in the inspection and closing of so-called "mushroom nurseries," and cooperate with the hospitals and other relief organizations.

XIV. Supplemental Statements:

Each child entering nursery is given complete physical examination with a record on individual card. All defects recorded and corrections insisted upon. All nurseries are inspected each week for acute and contagious diseases. Records made and referred to agencies caring for special cases. Weight charts used, each child weighed every two or four weeks, and nutritional teaching to parents and child. All medical records kept in each individual nursery.

A. G. SCHLINK, M. D., *Medical Director*

The most significant piece of work during the year has been the weighing of children in the nurseries at regular intervals, and the recording of these findings upon a weight chart displayed at the nursery. Children from one to two years of age are weighed twice a month, those above that age, except in case of malnutrition, once a month. Each child's name appears upon the large weight chart, with its monthly record. In order to stimulate the interest of the children, colored stars are pasted upon the chart from month to month, a blue star for each underweight child and a red star for each "over the top" weight child, the star already on the chart to be replaced by one of the other color when necessary. A weight below normal, yet making a good gain, is also indicated. The children are taught the kinds of food which will produce red stars on the record, and the attention of the mothers is frequently called to their children's weight. It has been found that the best argument to convince the mother that her child needs nutritious food, regular hours of sleep, etc., is the child's weight chart.

MARGARET S. HASTINGS, *Executive Secretary*

DISTRICT NURSE ASSOCIATION

Toledo

I. Organized 1901. Board of Trustees of 21 women.

II. Scope of Work: General bedside, tuberculosis and child welfare; also dispensary for women and children.

III. Staff: Five supervising nurses; 23 field nurses; 23 doctors on free service, who give two hours per week; 1 social worker, 2 clerical assistants.

IV. Divisions of Work:

Prenatal. General work, not specialized.

Maternal. Number of deliveries by obstetricians in patient's home, 19.

Infant care. Number of centers, 9; number of weekly clinics, 12.

School age and adolescence; 7 part time medical officers and 6 school nurses have charge of the medical inspection in the schools, to which 15 hours are given weekly. Defects corrected during the year 1919, 25 per cent.

Nutritional classes; 1 class at dispensary for school children, under care of physician, 854 children in attendance; class method is used.

Communicable disease control: Quarantine is controlled and lifted by the Division of Health. Quarantined cases are cared for by nurses.

Care of dependent children: Have a boarding-out system under Social Service Federation; average number of children in each home, 2.

V. Total budget for current fiscal year, \$52,000. The organization is supported through a community chest. Work done by the association is both pay and free; if a fee is asked, it is 75 cents per hour, on the sliding scale.

VI. Cooperating agencies: The association cooperates with the State Department of Health in reporting of all sore eyes and communicable diseases; with the City Department of Health in quarantine work only; also cooperates with the hospitals and other relief organizations and nursing groups.

VII. There is a Division of Child Hygiene in Ohio.

XI. Statistical for the year ending December 31, 1919:

Prenatal care: Number of mothers cared for, 307; average number of months under care, 3. Average registration of mothers, about sixth month.

Postnatal care: Age limit of babies under care, up to two years. Total number under 2 years cared for, 2,771. Percentage of babies born in Toledo during the current calendar year, under supervision of association, 50 per cent. Total attendance at consultations, under 2 years, 972. Total births in Toledo, 4,790; total births under 1 year, 423; total deaths among children, 1 to 6 years, 169.

E. E. ROBERTS, R. N., *Superintendent*

PENNSYLVANIA

BABY HEALTH STATION

Bethlehem

I. Organized July, 1915. Board of trustees, composed of 6 men and 3 women.

II. Scope of work: We receive a record of each birth in South Bethlehem from the registrar. We visit the baby once a week for the first month, once a month until it is a year old and keep the child under supervision until it reaches school age.

III. Staff: Nurses: 1 supervisor; 3 field workers; 1 doctor on free service, who gives 2 hours, 5 days a week.

IV. Divisions of work:

Maternal: Number of deliveries by obstetricians, 600; by midwives, 471.

Infant care: Number of centers, 1; total number of weekly clinics, 5.

Pre-school age: Number of weekly clinics, 5; nutritional classes affiliated with children's clinics, 5, held at the same hour.

School age and adolescence; 1 full time medical officer and 2 school nurses in charge of medical inspection of schools; average time given to school inspection, 4 hours daily; to home visits, same.

Communicable disease control: Tuberculosis and venereal disease clinics, once a week—state clinics. Quarantine is controlled and lifted by City Health Department. Quarantine cases are cared for by one city nurse. Wassermann and luetin tests given routinely at hospital; positive reactions followed by routine treatment.

V. Total budget for current fiscal year, \$9,181. Organization supported by an appropriation from the city of \$100 monthly, and a community chest of \$750 monthly. (Began August, 1920, previously war chest and private subscriptions.) All work is given free of charge.

VI. Cooperating agencies: Association in full cooperation with the State and City Health Departments, and relief organizations.

VII. There is a Division of Child Hygiene in Pennsylvania.

IX. Population, 55,000.

X. Improvements observed as a result of activities of previous year:

Improved health among children; lessening of communicable diseases; increased intelligent care on part of parents.

XI. Statistical for year ending December 31, 1919:

Prenatal: Number of infant deaths, 33 stillborn, 104 under 1 year in district under supervision.

Postnatal: Age limit of children under care, 6 years; total number under 1 year cared for, 934; between 1 and 6 years, 214. Percentage of babies born within preceding year in the district covered by organization, under care of organization, 100 per cent. Total attendance at clinics of babies and children up to 6 years, 3,132. Total number of home visits made by nurses, 11,171. Total deaths, under 1 year, in district supervised, 104; among infants under care of association, 53. Total deaths among children from 1 to 5 years, 34, under care, 3.

XIV. Supplemental Statement:

The Baby Health Station is the outgrowth of the Milk Station established by the Board of Health in 1915, where certified milk is dispensed to all families having infants and small children, also to adults on a physician's order. 45,021 quarts of certified milk were dispensed in 1919.

The nurses visit the homes with a birth record, supervising the child from birth to school age and teaching the mothers Child Hygiene and giving instruction in nutrition and prenatal care.

Little Mothers' Leagues are also taught in the public schools and in the Girls' Club by the child hygiene teachers.

In July, 1920, a Visiting Nurse Association was formed with one visiting nurse; others to be added as the work demands.

The percentage of foreign population in Bethlehem is very large, due principally to the fact that large steel mills are situated in the city. Most of these foreigners are Hungarians, although there are many Italians, Slavs, etc. In accordance with the custom of these people midwives are more often in attendance than doctors. In fact it may be said without fear of contradiction that more than half of the babies born of foreign mothers in the supervised section of the city are ushered in by a midwife.

Due to the fact that these midwives have not been properly educated for their work, there have been a great many cases of sore eyes and other diseases that could have been avoided by more skillful attendance. The Baby Health Station has taken hold of this problem and now holds a bi-monthly conference at the Health Station where instruction is given in child hygiene and the science of midwifery. Ten foreign midwives attend these conferences and a wonderful improvement has been noted in the service rendered foreign mothers.

CORA B. BRENERTON, M. D., *Director*

BABIES' HOSPITAL

Philadelphia

I. Organized 1911. Governed by a board of trustees composed of 16 men and 5 women, an advisory board of 20 men, and a social service committee of 31 women.

II. Scope of work: Caring for very sick babies at the hospital, giving prenatal care, teaching mothers care of their well babies, social service work at the dispensary, convalescence and disease prevention for babies and rest and instruction for mothers at Beach Haven.

III. Staff: Nurses: 4 superintendents and an assistant superintendent; 7 field workers; 2 social workers.

IV. Division of Work:

Prenatal: One weekly clinic with obstetrician in charge; 1 nurse doing clinical work, and 1 doing field work.

Maternal: Number of deliveries by obstetricians in hospital, 15; in patient's home, 36. Deliveries by midwives, 5.

Infant care: Number of centers, 1; daily preventive consultations and clinics for sick babies. Percentage of breast fed babies under six months on roll, about 90 per cent.

Preschool age: Daily clinics for sick and well children.

V. The hospital is supported by membership dues and special contributions. No fee is charged, but contributions encouraged.

VI. Cooperating agencies: Very close cooperation with all other agencies.

VII. There is a Division of Child Hygiene in Pennsylvania.

VIII. There is a Division of Child Hygiene in Philadelphia.

X. Improvements observed as a result of activities of previous year: Improved health among children, lessening of communicable diseases; decided increased intelligent care on part of parents. Increase in number of clinics. Decrease in number of sick babies admitted to hospital wards.

XI. Statistical for year ending December 31, 1919:

Prenatal care: Number of mothers cared for, 123. Number of infant deaths, 5; 2 at birth and 3 during first three months. Average registration of mothers, about fourth month; earliest case, first month.

Postnatal care: Age limit of babies under care of hospital, birth to six years. Number under one year cared for, 225 at dispensary, 57 at hospital. Number between 1 and 6 years, 768 at dispensary, 32 at hospital. Total attendance at clinic, under 1 year, 225; from 1 to 6 years, 679. Total deaths, for year ending June 1, 1920, among infants under care, 33 at dispensary, 21 at hospital.

XII. Record system: The hospital has a continuous record of child, prenatal care to school age period, indicating defects remedied, character of feeding, and environmental surroundings.

RENA P. FOX, R. N., *Superintendent*

Review of Activities: The Babies' Hospital was opened July 6, 1911, as an open air summer hospital for very sick infants who could not be cared for in their homes, or for whom no hospital accommodations could be found. The original plan made provision for summer care only, but the number of readmissions the first season convinced the medical staff that the period of treatment must be lengthened to guard against relapse. A system of follow-up home visiting was accordingly developed, the number of visits being multiplied to meet the need.

Convalescent Home: Another distressing experience of the first year was that many of the babies who had recovered from the disease for which they had been admitted, succumbed during the following fall or winter; they evidently had not attained sufficient resistance to withstand the ravages of the cold weather plague. This indicated not only the necessity of longer period of treatment, but the need of a hospital ward. To meet this need the convalescent house was established.

Dispensary: The next development was the establishment of a mid-city receiving station, with an out-patient department, which is open every week day throughout the year, for dispensary treatment. Cases are followed up by home visits by nurses and social service workers.

Prenatal Clinic: A prenatal clinic was organized the fourth year, and has become one of the most important and successful features of the hospital's endeavors.

Since its fifth year the hospital has been endeavoring to secure a properly equipped health preservation building, in which dispensaries, health and development clinics, prenatal clinics, dental clinic, demonstrator and class instructions to mothers, fathers and old sisters, may be conducted in a more

effective way. War conditions have delayed the construction of this building, but it is now rapidly approaching completion.*

CHARLES A. FIFE, M. D., *President*

PHILADELPHIA ASSOCIATION OF DAY NURSERIES

I. Organized 1898. The officers of the association form the executive committee. The association is governed by a board of 21 directors, composed of the president of each nursery in the association. Standing Committees: Medical Regulations; Standard Report; Social Service; Superintendent's Meeting.

II. Scope of Work: The association is composed of 21 day nurseries, caring for approximately 1,000 children from over 500 families, with an aggregate attendance of 200,000 children during the year. The aim and methods of the association are as follows:

The establishment and maintenance of the highest type of child care in every nursery, with constructive service to the family of which the child is a member. Organization of Special Committees to study special problems; conferences of board members, with addresses by child welfare experts; Superintendents' Meetings for the purpose of stimulating progress in the conduct of the Day Nurseries; standardization of admission and health regulations; records and record forms. Cooperation with the Federal Children's Bureau; the State and City Departments of Health; all agencies interested in child and family welfare. Surveys of the Day Nurseries as they already exist, followed by the printing of studies embodying the findings and setting forth the standards to be attained.

V. Financial: The central office of the association is supported by membership dues and contributions from the associated nurseries raised specially for this purpose.

VI. Cooperating Agencies: Close cooperation, by means of regular conferences, special addresses to members of the association, with individual cooperation from the nurseries as occasion arises, is maintained with the City Department of Health, Visiting Nurse Society, Hospital Social Service Departments, Relief Organizations, Private Groups interested in child welfare, including the White-Williams Foundation (vocational guidance for girls), the Child Federation, etc. Information regarding new nurseries, and cases of contagious diseases in unassociated nurseries have been reported to the City Department of Health by the central office during the past year.

XII. Record System: A medical record card has been introduced into the associated nurseries. This card was specially drafted by the association and is intended for the use of the nursery doctor who makes a thorough medical examination of each child before admission, followed by regular inspection at stated intervals after the child is under nursery care.

Report of the Year's Work: Since January, 1920, the association has employed a full-time executive secretary, which has made it possible to develop and intensify the work accomplished through the central office. One of the most important phases of the work has been the greater emphasis laid on the Day Nursery's opportunities and obligations in regard to health supervision and propaganda. In this connection mention may be made of the medical record card introduced by the Medical Regulations Committee, and of the following recommendation which was passed at the April meeting, after a discussion in regard to the policy of admitting babies. "In view of the inadvisability of long hours of work for the mother of a very young baby, her

* The new building of the Babies' Hospital is to be formally opened May 9 and 10, 1921.

temptation to wean the baby in order to place it, and the impossibility of assuring, even in the best day nursery, the quiet atmosphere and individual care so essential to the health and well-being of all young babies. This committee strongly recommends that no child under 9 months of age be accepted in any day nursery of the Association until the case has been thoroughly investigated and it has been conclusively proved that no other solution of this particular family problem is possible for the present." Through the Superintendents' Meeting Committee, monthly meetings were arranged for the Superintendents of the nurseries, with expert speakers on Food, Health, Recreation, etc., while the work of the Standard Report Forms Committee in introducing a family history card which includes information regarding the health of the entire family of each child in the nursery, and a superintendent's monthly report which includes statistics regarding the number of contagious and infectious diseases known to the nursery, the number of visits made by the visiting nurse, etc., is in line with the demand for all information which pertains to the safeguarding of the health of the community.

In the nurseries themselves, work of a more intensive kind is being carried out. As vacancies arise on the various staffs, the introduction of a higher type of work is bringing about a more careful study of the individual child and greater attention to the question of health. For example, in one nursery the untrained woman in charge of the younger children has been replaced by a graduate nurse; in two others the old-time kindly but inefficient "matron" has been succeeded in one case by a trained nurse, in the other by a high-grade worker with public health nursing experience. The introduction of a trained social worker, in place of the former volunteer visitor, to investigate applications and do constructive social and health work with the families of the day nursery children is widening the scope of day nursery work in many ways and may be counted as one of the important steps forward, in the history of the association.

Mention might also be made of the printing of the report of a study of the Philadelphia Day Nurseries made by Mrs. Helen Glenn Tyson, under the title of "The Day Nursery in Its Community Relations." There is no doubt that the valuable suggestions and recommendations contained in this report stimulated interest in the aims of the association and were largely responsible for the carrying out of definite health measures.

FRANCES COLBOURNE, *Executive Secretary*

PHILADELPHIA PEDIATRIC SOCIETY

The Philadelphia Pediatric Society was founded in 1896 and has now a total membership of 300. The membership is made up of physicians who are interested in the diseases of children either in general or in some special way. Many members of the society are general practitioners. The society has always taken an active part in all measures to promote child welfare in Philadelphia. At the present time the Board of Directors is in conference with the Commissioner of Health of Philadelphia in an effort to improve the quarantine regulations for communicable diseases, and bring them to date, so that they will coincide with the opinion held by the leading authorities in the control of these diseases.

The society's Milk Commission has made rapid progress and is now certifying to seven dairies in the vicinity of Philadelphia, and under our supervision over five thousand quarts came into Philadelphia this summer and two thousand quarts to the summer resorts along the Jersey coast. The Commission has now compelled the dairies under its supervision to label the cap correctly. That is, the cap states the actual day of the production of the milk, both of the morning and afternoon milking, so that the milk is marked

"Monday A. M." or "Monday P. M." and as the milk of our dairies is cooled, bottled, labeled and shipped right after each milking it means the babies of Philadelphia can obtain fresh milk. The cap also bears the label "four per cent fat" and the Philadelphia Pediatric Society's Commission insists that the milk must contain at least four per cent and not over four and one-half per cent fat. Our dairies have no difficulty in producing milk containing less than ten thousand bacteria to the centimeter, which is the requirement of the Commission.

During the last year a number of the dairies gave the milking machine a thorough trial, but it has been abandoned by all the dairies because they were able to obtain lower bacteria counts by hand milking. Finally, it is pleasing to be able to report that the tuberculin testing this year has given a low percentage in all the dairies, the average for the seven dairies was about one and one-half per cent.

HOWARD CHILDS CARPENTER, M. D., *Secretary*

STARR CENTRE ASSOCIATION

Philadelphia

I. Organized 1897. Governed by a board of trustees, composed of 7 men and 8 women.

III. Staff: Nurses; 1 supervisor, 4 field workers, 3 doctors who visit at dispensary hours, 1 social worker, 1 part time dietitian, who gives 4 hours each week.

IV. Divisions of Work:

Prenatal: Number of weekly clinics, with obstetricians in charge, 6; nurses doing clinical work, 1; field workers, 1; supervisors, 1.

Maternal: Number of deliveries by obstetricians, in hospital, 7; outpatient service, 56; in patient's home, 25; by midwives, 41.

Infant care: Number of centers, 1; number of weekly conferences, 6. Percentage of breast fed babies under six months on roll, 95 per cent.

Pre-school age: Number of weekly clinics, 6. The mental health of the child is given especial consideration by necessary advice and treatment.

V. Association supported by voluntary contributions. Fees for work graded according to service rendered, from 10 cents to 25 cents.

VI. Cooperating agencies: Association cooperates with City Health Department, relief organizations, and private groups.

VII. There is a Division of Child Hygiene in Pennsylvania.

VIII. There is a Division of Child Hygiene in Philadelphia.

IX. Population of city, 2,000,000.

XI. Statistical for year ending December 31, 1919:

Prenatal care: Number of mothers confined; abortions, 2, full time, 128; premature, 1 (child living). Number of mothers cared for, 242; average number of months under care, 5; total deaths of mothers, 1 during puerperium. Number of infant deaths at birth, 1; during first month, 2. Average registration of mothers from the beginning of fourth month; earliest cases, second month.

Postnatal care: Age limit of children under care, 6 years. Number under 1 year cared for, 413; between 1 and 6 years, 437. Percentage of babies born in city during calendar year under supervision of association, approximately 2 per cent. Total attendance at clinics 5,034; under 1 year, 2,976; 1 to 6 years, 2,058. Death of infants under care of association, 19.

XII. Record system: Association has a record system indicating defects remedied, character of feeding and environmental surroundings.

XIV. Supplemental: The work has been extended during the year by

the opening of a pre-school age clinic, designed to avert the permanent danger which is frequently found in children when they enter school, and which could be avoided by examinations at regular intervals between the ages of 2 and 6 years. The clinic was organized March 31, 1920, and has been held weekly since; about four children have been given a thorough examination at each clinic. Results have been so satisfactory that the clinic is to be held daily during the coming year. It is hoped that a dental clinic can be established in connection with the one for the children of pre-school age.

Nutritional activities: It is felt that our cooking and sewing classes deserve special mention, for they are doing a great work in an unspectacular way. Two sessions of two hours each are held each week, and the worker in charge of the classes teaches the mothers to cook American food in the American way, and to make suitable and practical clothes for the baby. Thus in a very quiet and unobtrusive way she is carrying on intensive Americanization. The teacher also visits in their homes the mothers who come for instruction, and she thereby acquires first-hand information which enables her to adapt her class instructions to the needs of these families. Yet, with all these activities it is felt that the surface of real social service has scarcely been scratched.

WILLIAM N. BRADLEY, M. D., *Medical Director*

VISITING NURSE ASSOCIATION

Reading

I. Organized April 23, 1909. Governed by a board of trustees, composed of 10 men and 10 women.

II. Scope of Work: Visit all cases needing nursing care reported by family, doctors, Metropolitan Life Insurance Company; also do industrial nursing. The association's most active work is baby welfare work.

III. Staff: Nurses; 2 supervisors; 10 field workers; 8 part time doctors; 8 volunteer social workers; 1 full time and 1 part time clerical assistants.

IV. Divisions of Work:

Prenatal: One weekly clinic held, with obstetrician in charge.

Infant care: Number of centers, 8; weekly clinics, 8. Breast-fed babies under six months, on roll, 75 per cent.

School age and adolescence: Three full time and 4 part time medical officers and 4 school nurses engaged in medical inspection in schools. Twenty hours weekly given to school inspection, and same to home visiting. Have started a health development class under medical officers and nurses.

Defects corrected: Of the 16,000 school children, 14,508 were examined, with the following results: 3,060 had decayed teeth; 5,801 defects in teeth; 3,497 had dental attention; 409 tonsils and adenoids removed; 515 fitted with glasses; 72 lenses changed; 4,493 defects corrected in all.

Communicable disease control: Quarantine controlled by Bureau of Health. Wassermann and luetin tests given routinely at the state dispensary.

V. Total budget for current fiscal year, \$70,000. Organization supported by membership dues and special contributions; also by patients' fees, dances, concerts and sometimes special drives for money. The work done is part pay and part free. Fee, when asked, is 75 cents.

VI. Cooperating agencies: The cooperation between school work and medical inspection and the child welfare work of the association is very good. Organization also cooperates with state and city departments of health and three hospitals in Reading.

VII. There is a Division of Child Hygiene in Pennsylvania.

IX. Population of Reading, 125,000.

XI. Statistical for year ending December 31, 1919:

Prenatal care: Number of mothers cared for, prenatal, 103; confinement, 233; average number of months under care, three to four months. Average registration of mothers during sixth month; earliest cases, third month.

Postnatal care: Total number under 1 year cared for, 2,888. Total attendance at clinic, under 1 year, 1,500; from 1 to 6 years, 390. Total births in Reading, 2,349 living births. Total deaths, under 1 year, 362. Total deaths among children from 1 to 6, 82.

XIV. Supplemental statement: Baby Welfare Work: We have eight Baby Welfare Clinics open once a week in the public school buildings, a doctor, nurse and a volunteer worker in attendance. Every nurse in her district attends to the station and all babies in the district. Since June, 1919, we have followed up all new-born babies, every baby is closely followed, the number of visits depends on the child's condition, home conditions and the mother's willingness to follow instruction.

We maintain a Baby Fresh Air Home four months in the year for sick babies, also a Recreation Home for mothers and children who need an outing in the country for the benefit of their health and a change from their home environment.

We have cut the death rate since visiting all the new-born babies from: Infant Death Rate: 1918, 156 per 1,000; 1919, 88 per 1,000; 1920, 71 per 1,000, and feel that a continuance will bring still better results.

We are trying to meet the need of the children between the ages of 2 to 6 years, those who are brought to the clinics are examined and data is checked on the cards that are supplied to us by the state, which can be used until the child is transferred to school.

ANNA R. BARLOW, R. N., *Superintendent*

RHODE ISLAND

CHILD WELFARE COMMITTEE

Providence

The Providence Child Welfare Committee was organized November 21, 1913.

The object of the committee at the time of its organization was the unification and standardization of the baby welfare stations in existence and the establishment of other stations as they might be needed. One or more delegates from each society conducting a baby welfare station, together with the doctors and nurses in charge of the consultations made up the committee.

Later the scope of the committee was broadened, and at present, besides conducting six child welfare stations, the committee which now is made up of one or more delegates from all child welfare agencies in the city, interests itself and aids in whatever way it feels is best all child welfare projects in the city.

Monthly meetings have been held with the exception of July and August, and at these meetings reports from welfare stations have been heard and child welfare topics discussed, either by some delegate of the committee or an invited authority on the subject.

During the past year the subjects discussed have been these:

1. Prenatal clinics.
2. The desirability of obstetrical care in the home, at a moderate fee by a competent physician.
3. The needs of crippled infants and children, especially along the lines of transportation and education.
4. Under nutrition in infants and children with reports of all nutrition work being done in the city.
5. Milk campaigns.

At the six welfare stations, the attendance during the year 1919 has been 2,638 infants and young children, 742 of these being new cases.

The prenatal clinic has been changed from an afternoon to a morning clinic and the attendance there has been 88 women, many of these making several visits.

VI. Cooperating agencies: The committee acts as a children's council. Delegates from all organizations in Providence interested in child life form the Child Welfare Committee. The committee cooperates with the State and City Health Departments, hospitals, medical schools, relief organizations and all private groups doing child welfare work.

VII. There is a Division of Child Welfare in Rhode Island.

VIII. There is a Division of Child Welfare in Providence.

IX. Population, 237,595, according to federal census of 1920.

XI. Statistical for year ending December 31, 1919:

Postnatal care: Age limits of children under care, 0-5 years; total number cared for, 2,638. Total attendance at clinics, 2,638. Total births in Providence, 5,810; deaths under 1 year, 515; among children, 1-5 years, 782.

XII. Record system: The committee keeps separate record cards; school cards and infant welfare cards indicate defects remedied; infant welfare cards indicate character of feeding.

ELLEN A. STONE, M. D., *Chairman*

MRS. EDWARD S. BRACKET, *Secretary-Treasurer*

CHILDREN'S WORK, DISTRICT NURSING ASSOCIATION

Providence

The Providence District Nursing Association employs a staff of twelve children's nurses whose chief duty is home visiting, giving prenatal instruction to prospective mothers and teaching mothers how to properly care for their infants and young children.

The nurses care for all children from birth to school age. The number cared for in 1919 was 3,645.

The nurses attend five consultations for well babies conducted by the Rhode Island Congress of Mothers, four clinics for sick babies under the auspices of the Rhode Island and Providence City Hospital, one prenatal clinic conducted by the Providence Lying-In Hospital and one nutritional clinic run by the Providence Housewives' League.

The Providence Health Department employs four special child welfare nurses who investigate and supervise boarding houses, midwives and visit all reported births having a birth return slip.

The work during the past year has gone on as usual, except during the influenza epidemic in February and March, when the nurses assisted in the care of influenza patients.

We have been able this year to do more systematic and intensive prenatal work. Number cared for, 548 cases.

The infant death rate for 1919 in Providence is the lowest in its history, 88 per 1,000.

WINIFRED L. FITZPATRICK, R. N., *Associate Superintendent*

VIRGINIA

CITY UNION OF THE KINGS' DAUGHTERS, VISITING NURSE ASSOCIATION

Norfolk

I. Organized November, 1896. Governed by a board of trustees, composed of one director of public health and seven women, and an auxiliary board of twenty-two.

II. Scope of Work: Visiting nurse work; clinics for children, under the following heads—general, feeding, eye, ear, nose and throat, mental, dental orthopedic.

III. Staff: Nurses; 1 supervisor; 13 field workers; 13 full time doctors; 1 on free service, who gives 9 hours per week; 12 full time dentists, on free service, who give 10 hours per week for 9 months; 1 clerical assistant.

IV. Divisions of Work:

Prenatal: Number of nurses doing work; 10 field work; 1 supervisor.

Maternal: Deliveries by obstetricians in patient's home, 240.

Infant care: Number of centers, 1; weekly clinics, 3.

Pre-school age: Number of weekly clinics, 3. The mental health of the child is given especial consideration in the mental clinic.

School age and adolescence: Eleven part time medical officers and 8 full time nurses in charge of medical inspection in schools. Average time given to school inspection, 260 hours; for home visiting, 96 hours. The association has health development classes under the supervision of teachers, medical officers and nurses.

Communicable disease control: Quarantine is controlled and lifted by Health Department. Wassermann and luetin tests are given routinely at all ages. Positive reactions are followed by routine treatment.

The association has a mobile unit in service.

V. The association is supported by membership dues, appropriations from city and state, and special contributions. Private and public appeals have been most successful in raising funds. In most cases the work is done free of charge; but when a charge is made, from 25 cents to any amount patient is willing to pay is asked.

VI. Cooperating agencies: The association cooperates with the Board of Health, United Charities, Salvation Army, hospitals, relief organizations and private groups.

VII. There is a Division of Child Hygiene in Virginia.

VIII. There is a Division of Child Hygiene in Norfolk.

IX. The city is zoned into five health districts. Population, July, 1920, 120,000.

X. Improvement observed as a result of activities of previous years: Infant mortality rate reduced 100 per cent in ten years.

XI. Statistical for year ending December 31, 1919:

Prenatal care: Total deaths of mothers, 17; at child birth, 7; postnatal care: All babies born during calendar year visited by association; 75 per cent visited during preceding year.

XIV. Supplemental statement: The object of the Norfolk City Union of The King's Daughters is "To give to the poor, and to those of moderate means, the best home nursing possible under the existing circumstances, and to give to the children of the poor, through clinics, the medical attention of specialists."

We began with one nurse. Now we are the proud possessors of a (bought and paid for) headquarters, large enough to house our nurses, who desire to live there; the various clinics, our offices, and our operating room and ward, where the children are kept for a day or two after operations. We have a staff of thirteen nurses, a superintendent, an office secretary and a working house-keeper.

Our Visiting Nurses paid last year 33,927 visits, the attendance at the Children's Clinic was 4,661. There were, in connection with the clinic 236 operations. At Christmas we saw that through friends and circles and by means of donations at our office, 1,175 children had a happy day, as well as 77 old people and "shut ins." Our circles also made Thanksgiving a happy time for 150 families, the names of all these being obtained through our

office from the superintendent. We supplied 38,761½ quarts of milk to our patients, some of whom paid in part for it, some of whom received it free.

Our total expenditures last year were \$31,428.58. We own two Ford cars for the use of the nurses, and have our own garage on the lot in the rear of our headquarters.

MRS. W. D. SOUTHALL, *Vice-President*

WASHINGTON

CHILD WELFARE DIVISION, HEALTH DEPARTMENT

Seattle

II. Scope of Work: Seven baby clinics; inspection and supervision of children's boarding home; home visiting by nurses; investigation of births reported by midwives; prenatal work.

III. Staff: Nurses; 1 supervisor; 3 field workers; 4 part time doctors.

IV. Divisions of Work:

Prenatal: Prenatal work done in connection with regular clinics.

Maternal: Patients admitted to city hospitals for care.

Pre-school age: Child welfare clinics are for children under school age. Clinics are for both sick and well children.

Care of dependent children: Division has a boarding-out system; 84 homes are supervised.

V. Total budget for current fiscal year, \$9,500. Supported by an appropriation from the city. Work done free of charge.

VI. Cooperating agencies: Other organizations call on the division for medical and surgical attention for children under school age, and cases are referred by the division to these agencies.

IX. Population, July 1, 1920, 319,659.

X. As a result of activities of previous year, infant mortality rate .19 per 1,000 population over 1918, under one year, and .25 under five years.

XI. Statistical for year ending December 31, 1919:

Prenatal care: Prenatal work done in connection with regular clinics. Total number of deaths, 199; still births, 210 during first month.

Postnatal care: Age limit of children, school age. Births in Seattle, 6,205 (still births excluded). Total deaths under one year, 332; among children from one to five years, 465.

XIV. Supplemental Statement:

The Child Welfare Division of the City Health Department is for the indigent poor of the city, caring for both sick and well children of pre-school age, also for children of the parochial schools. Clinics for school children are conducted by the School Board apart from the Health Department. The Seattle Branch of the Red Cross is also doing work along these lines.

CORA I. SAXE, M. D., *Chief Medical Inspector*

CHILDREN'S HOSPITAL ASSOCIATION

Milwaukee

The Milwaukee Children's Hospital is a private hospital caring for indigent children under twelve years of age—capacity 60 beds. No financial aid is received from city or state. Supported by private subscriptions and endowment.

School for Nurses. By affiliation only. Student Nurses are accepted from several accredited schools. They receive training in the various departments, which include Orthopedics, Infants' Feeding, Out-Patient and Social Service Departments. Twenty-one students are enrolled.

course in 1919. A central lecture course is conducted during the winter with affiliated schools. These lectures are on special subjects not usually found in the regular lecture course of a general hospital and include aural surgery, odontology, social service and various phases of public health work.

The board of directors is composed of nineteen women, who in 1894 realized the need of a hospital for sick and crippled children and through their untiring efforts and donations have made possible the carrying out of this work, and formed a nucleus for a large and better institution. The campaign conducted in the early spring has made possible the building of a new and modern hospital which will be started during the coming year.

Staff is closed and comprised of forty physicians and surgeons, who give their services gratuitously, as do also the staff at the Out-Patient Department.

An Out-Patient Department was opened in 1915, which serves as a clearing house for the hospital. Average attendance 1,200 per month. Clinics daily, 8 A. M. to 12 M., except Sundays and holidays. This department is supervised by a registered nurse.

A milk station was opened June, 1919. Milk and crackers are given to the children and parents for the nominal charge of two cents. The crackers are donated and the milk deficit covered by private subscription.

A department of social service was organized in 1914 and has three trained social workers.

Department of Registration. A complete registration is taken on all cases applying for admission at either hospital or Out-Patient Department and in turn are registered with the Confidential Exchange to insure against duplication of services. It also protects hospital from rendering services to people whose finances do not warrant assistance of this kind. This department has in its employ a registrar and two assistants.

A Department of Occupational Therapy was organized November, 1919. Supported by the Junior League. It is a wonderful institution for our small patients, as only those working with children can know what it means to furnish entertainment for them when activity is one of their normal attributes. A good sum of money has been donated to erect a large and complete workshop in the new hospital which will house apparatus for physical therapy.

GERTRUDE MCKEE, R. N., *Superintendent*

WISCONSIN

WISCONSIN ANTI-TUBERCULOSIS ASSOCIATION

Milwaukee

Organized: 1908.

Trustees: Thirteen men and two women.

Staff: Sixteen trained social workers; 8 clerical assistants.

Our child hygiene work is done through the Modern Health Crusade and through the field work incidental to the training of public health nurses and health instructors in our school of Public Health Social Work.

During the last school year, 190,000 Wisconsin children were enrolled in the Modern Health Crusade under the direction of our Crusader Director. In cooperation with other agencies, the students in our courses have done field work through the schools in Milwaukee County, outside the city of Milwaukee during the past school year, and during the summer they have been conducting baby welfare stations with the cooperation of the Red Cross and local physicians.

DOROTHY PHILLIPS, *Assistant to Executive Secretary*

MEMBERSHIP

391

CONTRIBUTORS

1920

District of Columbia

American Red Cross.. Washington, D. C.

Illinois

Mrs. Fanny D. Farwell .Lake Forest

Maryland

Mr. Charles C. Homer.....Baltimore
Mrs. J. H. Mason Knox, Jr...Baltimore

Massachusetts

Mrs. George Church..Great Barrington
Mrs. William Lowell Putnam....Boston
Unity Lend-A-Hand Society..Lexington

New Jersey

Mrs. J. Amory Haskell.....Red Bank

New York

Mr. Howard Bayne.....New York City
Miss Meta H. Brand.....New York City
The Commonwealth Fund New York City
Mrs. E. V. Currier.....New York City
Mrs. Marshall Russell..New York City
Dr. Philip Van Ingen....New York City

Ohio

Cleveland Community Fund..Cleveland

Pennsylvania

Charles H. Bear & Co.....York
Mrs. Charles D. Carr.....Philadelphia
Miss A. I. Laughlin.....Philadelphia
Mrs. W. L. Monro.....Pittsburgh

Wisconsin

Mr. Walter Stern.....Milwaukee

AMERICAN CHILD HYGIENE ASSOCIATION

Formerly

AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT

MORTALITY

MEMBERSHIP LIST, 1920

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Bertillon, Dr. Jacques.....	Paris, France
Broadbent, Hon. Benjamin.....	Huddersfield, England
Campbell, Dr. Janet.....	London, England
Guinon, Dr. Louis.....	Paris, France
Hoover, Mr. Herbert.....	New York City
King, Dr. Truby.....	Dunedin, New Zealand
Lane-Clayton, Dr. Janet E.....	London, England
Mackenzie, Sir Leslie.....	Edinburgh, Scotland
Newsholme, Sir Arthur.....	London, England
Pinard, A. Prof.....	Paris, France
Sand, Dr. Rene.....	Brussels, Belgium
Weill-Halle, Dr.....	Paris, France

*List includes paid up membership to April 20, 1921.

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Davidson, Mr. Walter, Milwaukee
"Friend", Milwaukee
"Friend", Milwaukee
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Gitchell Miss Katherine, Akron
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Holt, Dr. L. Emmet, New York City
Horlick, Mr. J. A., Racine
Kleckhofer, Mr. F. A. W., Pewaukee
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Knox, J. H. Mason, 3rd., Baltimore
Knox, Miss Katherine Bowdoin, Baltimore
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Phipps, Senator Lawrence C., Denver
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Russell, Mrs. Marshall, New York City
Schlotman, Mrs. Joseph P., Detroit
Stern, Mr. Walter, Milwaukee
Stotesbury, Mrs. Edward, Philadelphia
Volker, Mr. Wm., Kansas City
Wade, Mr. J. H., Cleveland
White, Mr. Richard J. Baltimore
Winton, Mr. and Mrs. C. J., Minneapolis
I. W.

*Deceased.

AFFILIATED MEMBERS

Canada

FREDERICTON

New Brunswick Dept. of Health

HAMILTON

Baby's Dispensary Guild

MONTREAL

Baby Health Centre, University
Settlement

Baby Welfare Committee

Baby Welfare Stations (English)

Canadian Patriotic Fund

TORONTO

Bureau of Child Welfare, Ontario

Provincial Board of Health

Canadian Public Health Association,

Child Welfare Section

Department of Public Health

VICTORIA

Provincial Board of Health,
California

OAKLAND

Baby Hospital Association

Public Health Centre of Alameda Co.

SANTA BARBARA

Visiting Nurse Association

SAN FRANCISCO

Baby Hygiene Committee, California
 Association of Collegiate Alumnae
 California Dairy Council

Colorado**DENVER**

Colorado Child Welfare Bureau
 Visiting Nurse Association

Connecticut**BRIDGEPORT**

Department of Public Charities
 Health Department

EAST HAVEN

Alumni Assn. of the Connecticut
 Training School for nurses

HARTFORD

Babies' Hospital, Inc., Health Stations
 Connecticut Organization for Public
 Health Nursing
 Division of Child Hygiene, State
 Department of Health

MIDDLETOWN

District Nurse Association

NEW HAVEN

Child Welfare Department of the
 Visiting Nurse Association
 Civic Protective Association
 Connecticut Children's Aid Society
 Hew Haven Health Center
 New Haven Orphan Asylum
 Yale University, Dept. of Education

WATERBURY

Visiting Nurse Association

Delaware**WILMINGTON**

Reconstruction Commission of Del.

District of Columbia**WASHINGTON**

Child Welfare Society
 Columbia and Children's Alumnae
 Association
 Providence Hospital
 Providence Hospital, Social Settlement

Georgia**ATLANTA**

Georgia State Assn. of Graduate
 Nurses

AUGUSTA

Augusta Woman's Club
 Children's Hospital Association
 Daughters of the King, Chapter 1096
 Sacred Heart Benevolent Association
 Sibley Union of the W. C. T. U.
 Woman's Auxiliary
 Woman's Society

Hawaii**HONOLULU**

Central Committee on Child Welfare
 District Nursing Department, Palama
 Settlement

Illinois**CHICAGO**

Chicago Woman's Club
 Elizabeth McCormick Memorial Fund
 Infant Welfare Society
 Lying-in-Hospital and Dispensary
 Mothers' Aid of the Chicago Lying-
 in-Hospital and Dispensary

GALESBURG

Child Welfare Committee, Knox Co.
 Chapter A. R. C.

LA SALLE

Infant Welfare Station (Emma Mat-
 thieson Chancellor Memorial)

SPRINGFIELD

Bureau of Child Hygiene, City Health
 Department
 Public State Library

Indiana**ELKHART**

Child Welfare Station, League of
 Women Voters

EVANSVILLE

Babies' Milk Fund Association

INDIANAPOLIS

Children's Aid Association
 Division of Infant and Child Hygiene,
 State Board of Health
 Flanner House

SOUTH BEND

Children's Dispensary and Hospital
 Association

Iowa**IOWA CITY**

Child Welfare Research Station, State
 University of Iowa

SIOUX CITY

Child Welfare Department, Organized
 Welfare Bureau

Kansas**WICHITA**

Christian Service League of America

Kentucky**LOUISVILLE**

Public Health Nursing Association

Louisiana**NEW ORLEANS**

Child Welfare Association

Maine**AUBURN**

Lewiston-Auburn Child Hygiene As-
 sociation

AUGUSTA

Maine Public Health Association

PORTLAND

Baby Hygiene & Child Welfare Assn.

Maryland**BALTIMORE**

Babies' Milk Fund Association
 Council Milk & Ice Fund
 Florence Crittenton Mission
 Health Department
 Jewish Children's Bureau

CUMBERLAND

Baby Welfare Section of Civic Club

Massachusetts**BOSTON**

Baby Hygiene Association *
 Children's Aid Society
 Floating Hospital
 Committee on Prenatal and Obstetrical Care, Women's Municipal League
 Instructive District Nursing Assn.
 Massachusetts Milk Consumers' Assn.
 Massachusetts Society for the Prevention of Cruelty to Children
 Massachusetts State Department of Health
 Social Service Library, Simmon's College

CAMBRIDGE

Avon Home
 Cambridge Health Committee

GARDNER

Massachusetts Branch National Congress of Mothers and Parent-Teacher Association

GREAT BARRINGTON

Visiting Nurse Association

HOLYOKE

Child Welfare Commission

LEXINGTON

Unity Lend-a-Hand Society

QUINCY

Katharyn Crane Memorial Club

SPRINGFIELD

Visiting Nurse Association

WORCESTER

Society for District Nursing

Michigan**BATTLE CREEK**

Alumnae Association Battle Creek Sanitarium and Hospital Training for Nurses
 Michigan Sanitarium and Benevolent Assn.

Race Betterment Foundation

BENTON HARBOR

Child Welfare Association

DETROIT

Babies' Milk Fund of the V. N. A.
 Children's Free Hospital Association
 Farrand Training School Alumnae Assn.

Merrill-Palmer School

GRAND RAPIDS

Clinic for Infant Feeding

Minnesota**DULUTH**

Infant Welfare Department, Duluth
 Consistory Scottish Rite Masons

MINNEAPOLIS

Council of Social Agencies
 Infant Welfare Society
 Public Library

ST. PAUL

Baby Welfare Association
 Minnesota Public Health Association
 State Board of Health

Missouri**INDEPENDENCE**

Latter day Saints of the Reorganized Church
 Health Department

KANSAS CITY

Kansas City Medical Library Club
 St. Luke's Child Welfare Club

ST. LOUIS

"Asklepios"—Washington University Scientific Society
 Board of Religious Organization
 Children's Aid Society
 Children's Hospital
 Children's Lunch Association
 Health Service Bureau A. R. C., St. Louis Chapter
 Holy Communion Day Nursery
 Maternity Hospital
 Missouri State Nurses' Association
 Municipal Nurses' Board
 Pediatric Society

Montana**HELENA**

Montana State Association of Graduate Nurses

Nebraska**LINCOLN**

Agric. Extension Service, University of Nebraska

New Hampshire**BERLIN**

Berlin Mills Co's. District Nurse

New Jersey**ATLANTIC CITY**

Child Federation

EAST ORANGE

Free Public Library

ELIZABETH

Visiting Nurse Association

JERSEY CITY

Division of Child Hygiene, Health Department

MONTCLAIR

Board of Health

MOORESTOWN

N. J. Congress of Mothers

NEWARK

Babies' Hospital

ORANGE

Diet Kitchen of the Oranges

TRENTON

Commission for the Blind
 Division of School Medical Inspection and Welfare Nursing

New York**ALBANY**

James C. Farrell Memorial

AMSTERDAM

Infants' and Child Welfare League

BATAVIA

Infant Welfare Association

BROOKLYN

Children's Aid Society
Pediatric Society
Visiting Nurse Association

BUFFALO

Bureau of Health
District Nursing Association

NEW YORK CITY

American Nurses' Association
Babies' Hospital
Babies' Welfare Federation
Bellevue Hospital, Social Service Dept.

Berwind Free Maternity Clinic
Child Welfare League of America
Health Service Dept. N. Y. Co. Chapter, A. R. C.

Henry Street Settlement
Jacobi Division for Children of the Lennox Hill Hospital
Maternity Center Association
Metropolitan Life Insurance Co., Industrial Dept.

National Child Welfare Association
National Federation of Day Nurseries
National League of Nursing Education
National Organization for Public Health Nursing

National Tuberculosis Association
N. Y. Association for Improving Condition of the Poor

N. Y. Diet Kitchen Association
Presbyterian Hospital, Out-Patient Department

Sloane Hospital for Women
State Charities Aid Association
Sub-Committee for Mothers and Infants, of the State Charities Aid Association

RIVERDALE-ON-HUDSON

Health League

ROCHESTER

Bureau of Health

SYRACUSE

Bureau of Child Hygiene Health Dept.
Child Welfare Committee
St. Mary's Maternity Hospital and Infant Asylum, Solvay Circle, Solvay Process Co.

TROY

Woman's Club

WATERTOWN

Visiting Nurse Association

North Carolina**RALEIGH**

State Board of Health

Ohio**CINCINNATI**

Babies' Milk Fund Association
Free Dental Clinic Society
Ohio State Assn. of Graduate Nurses
Protestant Home for the Friendless and Foundlings
Public Health Federation
United Jewish Social Agencies
Visiting Nurse Association

CLEVELAND

Adelbert College Library
Associated Charities
Babies' Dispensary & Hospital
Board of Health
Catherine Horstmann Home
Catholic Charities Office
Children's Aid Society
Children's Fresh Air Camp
Christian Orphanage
Community Fund
Day Nursery Association
Federation of Women's Clubs, Philanthropy Committee
Humane Society
Mouth Hygiene Association
Protestant Orphanage
Federation of Jewish Charities
Home of the Holy Family
Jones Home
Salvation Army Rescue Home
S. Ann's Maternity Hospital
S. John's Orphanage
S. Joseph's Orphanage
St. Vincent's Orphan Asylum
Welfare Federation
Visiting Nurse Association

COLUMBUS

Instructive District Nursing Assn.

ELYRIA

Ohio Society for Crippled Children

TOLEDO

District Nurse Association

YOUNGSTOWN

Visiting Nurse Association

Oregon**EUGENE**

University of Oregon Library

SALEM

Oregon State Library

Pennsylvania**BRYN MAWR**

Bryn Mawr College Library

CHESTER

Child Health Center

NEW CASTLE

Child Welfare Society

PHILADELPHIA

Association of Day Nurseries
Babies' Hospital
Child Federation
Children's Hospital
Penna.-Delaware Division, A. R. C.
Pediatric Society
St. Christopher's Hospital, Social Service Dept.
Starr Center Association

PITTSBURGH

Federation of Jewish Philanthropies
Tuberculosis League

READING

Visiting Nurse Association

SOUTH BETHLEHEM

Baby Health Station

YORK

Visiting Nurse Association

Philippine Islands**MANILA**

College of Medicine and Surgery
 Liga Nacional para la Proteccion de
 la Primera Infancia
 Philippines Chapter A. R. C.
 Public Welfare Board

Rhode Island**PROVIDENCE**

Child Welfare Committee
 Child Welfare Dept., R. I. Congress
 of Mothers and Parent-Teacher
 Association
 District Nursing Association
 Division of Child Hygiene, Health
 Dept.
 State Board of Health, Division of
 Child Welfare

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Brown County Red Cross, Health Unit

Texas**DALLAS**

Civic Federation

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 Ladies' Literary Club

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 State Department of Health

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Health Department

Wisconsin**BELOIT**

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MILWAUKEE

Children's Free Hospital
 Department of Health
 Infants' Hospital
 Visiting Nurse Association
 Wisconsin Anti-Tuberculosis Assn.

General Membership

Canada

Babies' Dispensary Guild (Affil.)	Hamilton
Baby Health Centre, University Settlement of Montreal. (Affil.)	Montreal
Baby Welfare Committee, (Affil.)	Montreal
Baby Welfare Station, (English) (Affil.)	Montreal
Blackader, Dr. A. D.	236 Mountain St., Montreal
Boucher, Dr. S.	Montreal
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Bureau of Child Welfare, Ont. Provincial Board of Health (Affil.)	440 Avenue Road Toronto
Canadian Patriotic Fund. (Affil.)	Montreal
Canadian Pub. Health Assn. Child Welfare Section, (Affil.)	Toronto
Chipman, Dr. W. W.	285 Mountain St., Montreal
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Gendreau, Dr. J. E., Dir. of Studies M. F. Montreal University	Montreal
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Lindsay, Dr. Lionel M.	455 Sherbrooke St., W. Montreal
MacMurchy, Dr. Helen, Chief, Div. of Child Welfare Ministry of Health Dominion of Canada.	Ottawa
McCullough, Dr. John W., Sec'y. Prov. Board of Health	Toronto
Mullin, Dr. R. H., Vancouver Gen. Hospital	Vancouver
New Brunswick Dept. of Health, (Affil.)	Fredericton, N. B.
Norman, Dr. J. T., Provincial Board of Health	Edmonton
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Provincial Board of Health, (Affil.)	Victoria, B. C.
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Ross, Dr. C. F. W.	Georgetown, Ontario
Royer, Dr. B. F., Chief Executive, Massachusetts-Halifax Comm.	Halifax, N. S.
Shearer, Dr. John G., Gen'l Sec'y., the Social Service Council of Canada.	Toronto
Smith, Miss Christine, R. N., Supt. Public Health Nurses, Provincial Board of Health	Edmonton
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Solandt, Rev. Donald M.	Cor Gerard & Church Sts., Toronto

China

Kellogg, Miss Gertrude E., R. N., American Board Missions	Fenchow, Shansi
Libby, Mrs. Walter	Wuhn, China
Young, Mrs. Charles W., Union Med. College.	Peking, China

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Brown, Dr. Walter H. Comm. for the Prev. of Tuberculosis	3 Rue de Berri, Paris, France

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Newsholme, Sir Arthur	London, England
Ministry of Health, (Affil.)	Whitashall, London

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Molina, Dr. P. B. Calle 63, No. 469, Merida, Mexico

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Snyder, Dr. J. Ross Woodward Bldg., Birmingham

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Tombs, Mr. John Tucson,

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Aves., Los Angeles

Baby Hospital Association, (Affil.) 51st & Dover St., Oakland

Baby Hygiene Committee, California Assn.
of Collegiate Alumnae

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Baldwin, Mr. Alexander R. 616 Security Bldg., Los Angeles

Blackburn, Mrs. Edna 932 Mills Bldg., San Francisco

Breed, Miss Josephine L., R. N. 520 Cowper St., Apt. 9, Palo Alto

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Brown, Mrs. I. I. Medical Bldg., San Francisco

California Dairy Council, (Affil.) Turner Terrace, San Manteo

Carter, Dr. C. Edgerton 216 Pine St., San Francisco

Carter, Mrs. L. L. Brockman Bldg., Los Angeles

Chain, Dr. John N. 2834 Divisadero St., San Francisco

Coblentz, Mrs. Jules Humboldt Natn'l Bk. Bldg. Eureka

Cunningham, Dr. Ruby L. 519 California St., San Francisco

Curtis, Miss Frances, R. N. 2707 Parker St., Berkeley

Dietrich, Dr. Henry 526 Western Ave., Petaluma

Eggleston, Miss Esther L. 1814 S. Van Ness Ave., Los Angeles

Flack, Miss Hally, R. N. 365 N. Raymond Ave., Pasadena

Fleischner, Dr. E. C. 457 Moss Ave., Oakland

Fowler, Mrs. E. M. 350 Post St., San Francisco

Gardner, Miss Helen W., R. N. Casa Colina, Chino

Gelston, Dr. C. F. 220 Hillside Ave., Piedmont

George, Miss Julia 240 Stockton St., San Francisco

Goethe, Mr. C. M. 1136 Eddy St., San Francisco

Goodrich, Mrs. Chauncey S. Capital Nat. Bank, Sacramento

Gray, Mr. R. S. Saratoga, Santa Clara Co.

Hadden, Miss Anne 153 Kearney St., San Francisco

Haynes, Dr. John Randolph Salinas

Helbing, Mrs. David 429 Con. Realty Bldg., Los Angeles

Howatt, Miss Lucy J., P. H. N. 2260 Jackson St., San Francisco

Kilgariff, Miss Helen R., R. N., Colusa County
School Nurse

King, Dr. Charles Lee Colusa

Kohn, Mrs. Simon 70 S. Euclid Ave., Pasadena

Lavenson, Mrs. H. J. 3251 Washington St., San Francisco

Layman, Dr. Mary H. Broadway Apts., Oakland

Legge, Mr. Robert T. 2592 Filbert St., San Francisco

Lewitt, Dr. Wm. B. University of California, Berkeley

..... 210 Post St., San Francisco

Livingston, Mrs. Edward	El Cerrito, San Mateo
Lucas, Dr. Wm. Palmer	2603 Steiner St., San Francisco
McCleave, Dr. Thomas C.	Federal Realty Bldg., Oakland
McDuffie, Mrs. Duncan	156 The Tunnel Road, Berkeley
McIntosh, Mrs. C. K.	Redwood City
Manning, Miss Rozzie	540 Elm St., Woodland
Manwaring, Dr. W. H.	Stanford University, Palo Alto
Merritt, Miss Hazel	1712 Arch St., Berkeley
Miller, Miss Anastasia	1531 K. St., Sacramento
Moore, Miss Mary Young, Bureau of Catholic Charities	823 Higgins Bldg., Los Angeles
Myers, Mrs. Lawrence A.	3434 Jackson St., San Francisco
Niebel, Mrs. H. L.	2749 Union St., San Francisco
Petersen, Dr. H. C.	305 Belding Bldg., Stockton
Porter, Dr. Langley	Schroth, Bldg., San Francisco
Potts, Miss Amy E.	Fruitvale
Powers, Dr. L. M., Commissioner of Health ..	1022 N. Alvarada St., Los Angeles
Pub. Health Cen. of Alameda County, (Affil.) ..	31st & Grove Sts., Oakland
Rosenblatt, Mrs. Irving	1780 Broadway, San Francisco
Roth, Mrs. Fred.	1770 Pacific Ave., San Francisco
Schussler, Mr. Henry	285 Geary St., San Francisco
Slemons, Dr. J. Morris	1140 S. Pasadena Ave., Pasadena
Smith, Dr. Dudley	Claremont Manor, Oakland
Stockton, Miss Eleanor, Chief Division of Child Welfare, Dept. of Public Health.	San Francisco
Streitmann, Dr. Wm. H.	Federal Realty Bldg., Oakland
Sweeney, Mr. J. D.	Red Bluff
Thum, Mr. Wm.	Pasadena
Visiting Nurse Association, (Affil.)	133 E. Haley St., Santa Barbara
Wallace, Miss Catherine	Pittsburg, Contia Cista Co.
Waterman, Mrs. Jesse	2131 Pierce St., San Francisco
West Mrs. Max	1641 Euclid Ave., Berkeley
Watters, Dr. Ethel, Director, Bureau of Child Hygiene, State Board of Health	San Francisco
Wilde, Dr. Maude, Chairman Mothers' Educa- tional Center	Los Angeles
Willits, Dr. Emma K.	Galen Bldg., San Francisco

Colorado

Ahlene, Miss Frances, R. N.	829 4th Ave., Longmont
Amesse, Dr. J. W.	Metropolitan Bldg., Denver
Arnell, Mrs. James Rae	1055 Penna. St., Denver
Ashley, Mr. Frank R.	Western Chemical Mfg. Co., Denver
Blaney, Mrs. H. M.	909 Grant St., Denver
Boeke, Miss Laura, R. N.	Canon City
Bolles, Dr. Jeanette H.	1457 Ogden St., Denver
Brown, Mrs. David R. C.	865 Logan St., Denver
Campbell, Mrs. R. C.	1075 Pennsylvania St., Denver
Campion, Miss Helen	800 Logan Ave., Denver
Campion, Mr. and Mrs. John F.	800 Logan Ave., Denver
Campion, Miss Phyllis	800 Logan Ave., Denver
Childs, Dr. and Mrs. S. B.	930 Pearl St., Denver
Collins, Dr. Edward Welles.	524 Majestic Bldg., Denver
Colorado Child Welfare Bureau, (Affil.)	1061 Clarkson St., Denver
Combs, Mrs. H. B.	738 Pearl St., Denver
Cusack, Mrs. Christopher	820 St. Paul St., Denver
Davis, Mrs. Robbin H.	2945 E. 7th St., Denver
Davis, Mr. Robbin H.	2945 E. 7th St., Denver
Denison, Mrs. Charles	730 Emerson St., Denver
Edson, Dr. Carroll E.	517 Majestic Bldg., Denver
Emery, Mrs. Charles F.	720 Race St., Denver
Evans, Mrs. John	2000 E. Alameda Ave., Denver
Gegenbach, Dr. Frank P.	906-8 Metropolitan Bldg., Denver
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Connecticut

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Bigelow, Miss A. Elizabeth	53 Crown St., Meriden
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Indiana

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Rust, Dr. Josephine Wetmore	Mason City
Sampson, Dr. F. E.	Creston

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Shambaugh, Mrs. Jessie	Clarinda
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Krauss, Mr. Marcel	Krauss Bros. Lum. Co., New Orleans
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Maine

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Belt, Mrs. W. H. G.	613 Reservoir St., Baltimore
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Hendley, Mrs. Charles W.	Guilford, Baltimore
Hochschild, Mrs. Max	Emersonian Apts., Baltimore
Homer, Mr. Chas C., Jr., %Second National Bank	Baltimore
Hooker, Dr. Donald R.	Upland, Roland Park
Hooper, Mrs. Jas. E.	St. Paul & 23rd Sts., Baltimore
Hopkins, Mrs. Robert D.	Beechfield, Baltimore
Howland, Dr. John	Johns Hopkins Hospital, Baltimore
Humrichouse, Dr. J. W.	148 W. Washington St., Hagersown
Hunner, Dr. Guy L.	2305 St. Paul St., Baltimore
Hutzler, Mrs. Albert D.	Lawina Rd., Walbrook, Baltimore
Hutzler, Miss Mabel	1801 Eutaw Place, Baltimore
Iglehart, Mrs. Francis N.	Stevenson
Jencks, Mrs. Francis M.	1 W. Mt. Vernon Place, Baltimore
Jewish Children's Bureau, (Affil.)	411 W. Fayette St., Baltimore
Johnson, Dr. T. B.	7 E. Church St., Frederick
Joslin, Dr. Charles Loring	33 W. Preston St., Baltimore
Katz, Mrs. A. Ray	2532 Eutaw Place, Baltimore
Keidel, Mrs. Charles	914 St. Paul St., Baltimore
Keyser, Mr. R. Brent	912 Keyser Bldg., Baltimore
Knipp, Master George W.	Athol Ave., Baltimore
Knipp, Miss Gertrude B.	1821 Park Ave., Baltimore
Knipp, Dr. Harry E.	Fremont Av. & Lanvale St., Balto.
Knox, Dr. J. H. Mason, Jr.	The Severn Apts., Baltimore
Knox, Mrs. J. H. Mason, Jr.	Wendover Road, Baltimore
Knox, Miss Katherine Bowdoin	Wendover Road, Baltimore
Knox, J. H. Mason, 3rd.	Wendover Road, Baltimore
Koppelman, Mr. Charles H.	16 W. Madison St., Baltimore
Lankford, Dr. Catherine F.	Princess Anne, Md.
Lauer, Mrs. Leon	The Esplanade Apts., Baltimore
Leete, Miss Harriet L. R. N.	1211 Cathedral St., Baltimore
Levering, Mr Joshua	706 Keyser Bldg., Baltimore
Libby, Mrs. Walter	2041 Harlem Ave., Baltimore
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Parker, Miss Eleanor, R. N.	825 N. Fulton Ave., Baltimore
Platt, Mrs. James B.	1301 St. Paul St., Baltimore
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Poultney, Mrs. Wm. D.	505 Park Ave., Baltimore
Powers, Dr. Grover Francis	1600 Bolton, St., Baltimore
Price, Mr. Alfred A.	809 Beaumont Ave., Govanstown
Ramsay, Mr. John B.	1218 St. Paul St., Baltimore
Roten, Mrs. Adolph	2321 Eutaw Place, Baltimore
Rothholz, Dr. Alma S.	2108 Bolton St., Baltimore
Ruhrah, Dr. John	Algonquin Apts., Baltimore
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Seegar, Dr. and Mrs. J. K. B. E.	1529 Park Ave., Baltimore
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Shoemaker, Mr. S. M.	Eccleston
Spicer, Miss Esther, R. N.	2004 Park Ave., Baltimore
Sprunt, Mrs. Thomas P.	107 Norwood Rd., Guilford, Balto.
Steele, Dr. Guy	Cambridge
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Thom, Mrs. DeCoursey Wright	600 Cathedral St., Baltimore
Townsend, Mr John S.	Calvert Bank, Baltimore
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Tyree, Miss M. Evelyn, R. N.	1039 N. Calvert St., Baltimore
Walker, Miss M. Evelyn, R. N. Supt., In-	
structive Visiting Nurse Assn.	1123 Madison Ave., Baltimore
Waters, Miss Ysabella, R. N., %Training School for Nurses	Johns Hopkins Hospital, Baltimore
Welch, Dr. Wm. H.	807 St. Paul St., Baltimore
Wheeler, Mr. James R.	Commonwealth Bank, Baltimore

Whelan, Mr. Thomas A.	1300 N. Calvert St., Baltimore
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Alson, Mrs. A. E.	Manchester
Atkins, Mrs. E. F., Jr.	587 Concord Ave., Belmont
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Avon Home (Affil.)	1000 Massachusetts Ave., Cambridge
Baby Hygiene Association, (Affil.)	376 Boylston St., Boston
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Barnaby, Miss Marietta D.	Heywood Hospital, Gardner
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Blood, Miss Alice F.	3 Concord Ave., Cambridge
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Borden, Mrs. Spencer, Sr.	Fall River
Boston Children's Aid Society, (Affil.)	43 Hawkins St., Boston
Boston Floating Hospital, (Affil.)	54 Devonshire St., Boston
Bowditch, Dr. Henry I.	86 Bay State Road, Boston
Brooks, Mrs. Henry G.	Centre St., Milton
Broughton, Dr. Arthur N.	46 Elliot St., Jamaica Plains, Boston
Brown, Miss Ida M.	50 Dunster Road, Jamaica Plains
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Church, Mrs. John H. C.	Great Barrington
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Crompton, Mrs. Randolph	38 Elm St., Worcester
Curry, Dr. Edmund F.	299 Hanover St., Fall River
Cushing, Mrs. W. E.	68 Beacon St., Boston
Davis, Dr. Nelson C.	494 Rutherford Ave., Boston
Day, Dr. Hilbert F.	45 Bay State Road, Boston
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Denny, Dr. Francis P.	111 High St., Brookline
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Higgins, Mrs. Milton P.	228 West St., Worcester
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Hooper, Mrs. William	Manchester
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Hubbard, Dr. Elliot, Jr.	154 Riverway, Boston
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Huntington, Dr. James Lincoln	311 Marlborough St., Boston
Inman, Mrs. Chester M.	35 Midland St., Worcester
Instructive District Nursing Assn., (Affil.) ..	561 Massachusetts Ave., Boston
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Jackson, Miss Marion C.	88 Marlboro St., Boston
Jones, Miss Mary A.	270 Pine St., Fall River
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King, Mrs. H. L.	Adams St., Quincy
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Lee, Joseph	101 Tremont St., Boston
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Massachusetts Milk Consumers, Assn., (Affil.) ..	49 Beacon St., Boston
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Stoddard, Mrs. Charles N.	87 Prospect St., Greenfield

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Talbot, Dr. Fritz B.	311 Beacon St., Boston
Talbot, Mrs. George Stanley	Fearing Road., Hingham
Thayer, Mrs. Edward D.	39 Elm St., Worcester
Thompson, Miss Luella	294 Elm St., Holyoke
Tilton, Mrs. Henry O.	6 Chalmers Road, Worcester
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Visiting Nurse Association, (Affil.)	Great Barrington
Visiting Nurse Association, (Affil.)	Springfield
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Woodward, Mrs. S. B.	58 Pearl St., Worcester
Woodward Dr. William C., Health Com.	Boston
Worcester Society for Dist. Nursing, (Affil.)	27 Elm St., Worcester
Young, Dr. J. Herbert.	520 Commonwealth Ave., Boston

Michigan

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Babies' Milk Fund of Detroit, (Affil.)	4708 Brush Street, Detroit
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Berman, Dr. Harry S.	1447 David Whitney Bldg, Detroit
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Blodgett, Dr. W. E.	603 Kresge Bldg., Detroit
Bolton, Mrs. L. D.	227 Burnes Ave., Detroit
Bursley, Mrs. Joseph A.	1402 Hill St., Ann Arbor
Butzel, Mr. Fred	1012 Union Trust Bldg., Detroit
Child Welfare Assn., (Affil.)	Rm. 6 Traction Bldg., Benton Harbor
Children's Free Hospital Assn., (Affil.)	Antoine & Farnsworth Sts., Detroit
Clinic for Infant Feeding, (Affil.)	Cor. Louis St. & Market Ave., Grand Rapids
Cooley, Dr. Thomas B.	Kresge Medical Bldg., Detroit
Cowle, Dr. D. Murray	University of Michigan, Ann Arbor
Crapo, Mrs. S. T.	180 Seminole Ave., Detroit
Farrand Training School Alumnae Assn. (Affil.), Miss Jessie F. MacKenzie, Treas.	Harper Hospital, Detroit
Fischer, Dr. A. F.	Hancock
Freund, Mrs. Hugo A.	28 Chicago Blvd., Detroit
Green, Mrs. Heatley	375 Montclair Ave., Detroit
Greene, Mrs. B. M.	115 McLean Ave., Highland Park
Haass, Mrs. Julius H.	484 E. Grand Blvd., Detroit
Hardy, Dr. Faith Frances	Metz Building, Grand Rapids
Harry, Mrs. Joseph	375 Washington Rd., Grosse Pointe
Heenan, Mrs. J. R.	100 Josephine Ave., Detroit
Hoffman, Miss Charlotte, Supt. Out-Patient Dist. Sanitarium	Battle Creek
Holley, Mrs. Earl	485 Burns Ave., Detroit
Holley, Mrs. George M.	480 Burns Ave., Detroit
Holmes, Dr. Arthur D.	David Whitney Bldg., Detroit
Hoobler, Dr. B. Raymond	1563 David Whitney Bldg., Detroit
Jennings, Dr. Charles G.	937 Jefferson Ave. E., Detroit
Johansen, Miss I. C., County School Nurse.	402 County Bldg., Detroit
Johnston, Dr. Collins H.	528-528 Metz Bldg., Grand Rapids
Jones, Dr. Lafon.	607 Beach St., Flint
Kamperman, Dr. George	1013 David Whitney Bldg., Detroit
Kellogg, Dr. J. H., Supt. Battle Creek Sanitarium	Battle Creek

Kelsey, Mrs. J.	1007 Cass Ave., Detroit
Kimball, Dr. Arthur S.	310 Ward Bldg., Battle Creek
Koch, Dr. John C.	265 East Euclid Ave., Detroit
Krolik, Mr. Julian H.	310 E. Jefferson St., Detroit
Longstreet, Dr. Martha	520 Hayden St., Saginaw
McCool, Mrs. Daniel	425 N. Prospect St., Grand Rapids
McGregor, Mrs. Tracy	239 Brush St., Detroit
Meador, Dr. F. M., Director Medical Service City Dept. of Health	Detroit
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Menard, Mrs. Harry F.	222 La Salle Blvd., Detroit
Merrill-Palmer School, (Affil.)	302 Palmer Bldg., Detroit
Michigan Sanitarium & Benevolent Assn. (Affil.)	Battle Creek
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Perkins, Mrs. Elizabeth A., Director, Dept. Child Welfare, W. C. T. U.	Ann Arbor
Pope, Mrs. Willard	335 Seminole Ave., Detroit
Race Betterment Foundation, (Affil.) %Dr. J. H. Kellogg, President	Battle Creek
Rosenberger, Mrs. Oscar	123 Virginia Park, Detroit
Ross, Dr. Worth	1731 Parker St., Detroit
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Schlotman, Mrs. Joseph B.	1130 Woodward Ave., Detroit
Smith, Dr. Richard R.	Metz Building, Grand Rapids
Stevens, Mr. Henry Glover	615 Stevens Bldg., Detroit
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White, Dr. Thomas W.	David Whitney Bldg., Detroit

Minnesota

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Anderson, Dr. Edward Dyer	730 La Salle Bldg., Minneapolis
Andrews, Mrs. James C.	2232 Lake of the Isle Blvd., Min- neapolis
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Atwood, Miss Edith M.	2105 Irving Ave., S. Minneapolis
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Barney, Mrs. F. E.	915 S. E. 4th St., Minneapolis
Bell, Dr. J. Warren	1001 East River Road, Minneapolis
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Carpenter, Mrs. Elbert Lawrence	314 Clifton Ave., Minneapolis
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Carpenter, Mrs. Lawrence W.	2303 Pleasant Ave., Minneapolis
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Helmholz, Mrs. Henry F.	1009 4th St., S. E., Rochester
Hudson, Miss Irene	Benson
Huenekens, Dr. E. J.	538 La Salle Bldg., Minneapolis
Infant Welfare Department, Duluth Consis- tory Scottish Rite Masons, (Affil.)	Masonic Temple, Duluth
Infant Welfare Society of Minneapolis, (Affil.)	306 Meyers Arcade, Minneapolis
Jansen, Mrs. Charles	Little Falls
Jones, Mrs. D. P.	236 McKnight Bldg., Minneapolis
Langdon, Mrs. C. S.	2200 Pillsbury Ave., Minneapolis
Loevinger, Mr. M. S.	1699 Portland Ave., St. Paul
McDonald, Dr. A. L.	Duluth
McLaren, Dr. Jeanette M.	642 Lowry Bldg., St. Paul

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Blair, Dr. V. P.	400 Metropolitan Bldg., St. Louis
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Carpenter, Mrs. Geo. O., Jr.	6375 Waterman Ave., St. Louis
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Evans, Mr. W. F.	6363 Pershing Ave., St. Louis
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Haenssler, Mr. Herman H.	Laclede Bldg., St. Louis
Hall, Mr. Frederick H.	5846 Julian Ave., St. Louis
Hammar, Mrs. Virgie C.	7 Hortense Place, St. Louis
Harris, Mr. Benj.	9 Kingsbury Place St. Louis
Hasla, Mr. Lewis S.	5601 Kingsbury Place, St. Louis
Hazeltine, Mr. A. F.	5610 Bartmer Ave., St. Louis
Health Service Bureau, A. R. C., St. Louis	
Chapter, (Affil.)	Equitable Bldg., St. Louis
Heger, Mr. Fred, United States Bank	4th & Washington Sts., St. Louis
Heiss, Mr. Chas. F.	Hotel Statler, St. Louis
Hempelmann, Dr. T. C.	Metropolitan Bldg., St. Louis
Herbert, Mrs. J. M.	501 Clara Ave., St. Louis
Hinchey, Mr. A. H.	419 Bellevue St., Cape Girardeau
Hoener, Mr. Walter F.	3408 Arsenal St., St. Louis
Holliday, Mr. John H.	505 Oliver St., St. Louis
Holy Communion Day Nursery, (Affil.)	4626 Maryland Ave., St. Louis
Howard, Mrs. Kate M.	33 Vandeventer Place, St. Louis
Hunkins-Willis Co.	Century Bldg., St. Louis
Hurford, Dr. Phelps Grant	Wall Bldg., St. Louis
Huse, Mrs. Wm. L.	9 Westmoreland Place, St. Louis
Jackes, Mr. F. R.	10 Thornby Place, St. Louis
Jeans, Dr. Philip C.	500 S. Kingshighway, St. Louis
Johnston, Dr. Samuel E.	513 Commerce Bldg., Kansas City
Jones, Mrs. James C.	3 Kingsbury Place, St. Louis
Jones, Miss Jenny M. A.	5551 Enright Ave., St. Louis
Jones, Mr. and Mrs. McKittrick	6 Westmoreland Place, St. Louis
Kahn, Mr. Hyman	5 N. Main St., St. Louis
Kaiser, Mr. Millard O.	Kaiser Pub., Co., St. Louis

Kansas City Med. Library Club, (Affil.).....	1326 Rialto Bldg., Kansas City
Kapprel, Miss Mary C., R. N.....	1309 Sylvania St., St. Joseph
Kauffman, Mfg. Co., F. A.	106 S. 2nd St., St. Louis
Kauffman, Mr. R. King	Mercantile Trust Co., St. Louis
Keiser, Mrs. Robert	44 Portland Place, St. Louis
King, Mrs. Goodman	78 Vandeventer Place, St. Louis
Klein, Mr. Eugene S.	5504 Cates Ave., St. Louis
Knight, Mr. Harry	633 Boatmans Bk. Bldg., St. Louis
Koken Barber Supply Co.	Sidney & Texas Sts., St. Louis
LaBeaume, Mr. Louis	414 Union Ave., St. Louis
LaBeaume, Mrs. W. W.	5320 Waterman Ave., St. Louis
Lake, Mr. F. C., %Nugents Bros., D. G. Co....	St. Louis
Lambert, Mrs. A. W.	3933 W. Pine Blvd., St. Louis
Langsdorf, Mr. Julius.....	Nat'l Bk. of Com. Bldg., St. Louis
Laptad, Miss Evadne M., A. R. C.	901 Equitable Bldg., St. Louis
Latter Day Saints of the Reorganized Church Health Dept., (Affil.).....	Independence
Layman, Mr. W. A.	22 Kingsbury Place, St. Louis
Lewis, Mrs. Robert D.,	12 Hortense Place, St. Louis
Lewis, Mrs. Joseph	52 Westmoreland Place, St. Louis
Lightner, Mrs. Calvin R.	4396 Maryland Ave., St. Louis
Lippmann, Dr. Gustave	4668 Berlin Ave., St. Louis
Lonsway, Dr. Maurice J.	503 Wall Bldg., St. Louis
Lorie, Mrs. Alvin J.	3838 Harrison Blvd., Kansas City
McCluney, Mrs. James	4401 McPherson Ave., St. Louis
McCullough, Mr. Geo. R.	6117 Westminster Place, St. Louis
McCulloch, Mr. Hugh	819 University Club Bldg., St. Louis
McKay, Mrs. H. S.	3826 Castleman Ave., St. Louis
McMillan, Mrs. C. H.	4626 Maryland Ave., St. Louis
McPheeters, Mrs. S. B.	5295 Waterman Ave., St. Louis
Mass & Steffan	St. Louis
Mahaffey, Mrs. Birch	26 Kingsbury Place, St. Louis
Mallinckrodt, Mr. Edward, Sr.....	16 Westmoreland Place, St. Louis
Mallinckrodt, Mrs. Edw. Jr.	16 Westmoreland Place, St. Louis
Mallinckrodt, Mrs. Elizabeth E.	16 Westmoreland Place, St. Louis
Markham, Mr. George D.	4961 Pershing Ave., St. Louis
Marriott, Dr. W. McKim, St. Louis Children's Hospital	St. Louis
Martin, Dr. Charles P.	3903 W. Lee Ave., St. Louis
Medart Patent Pulley Co.	St. Louis
Mercantile Grocery Co.,	4655 Maryland Ave., St. Louis
Mesker, Mrs. Frank	4958 Forest Park Blvd., St. Louis
Meston, Mrs. Tom M.	501 Clara Ave., St. Louis
Miller, Dr. W. McN., Sec'y., Missouri Tuber- culosis Assn.	706 Pontiac Bldg., St. Louis
Missouri State Nurses' Association, (Affil.)....	6251 Etzel Ave., St. Louis
Moody, Dr. E. A.	812-15 Frisco Bldg., Joplin
Moore, Mrs. George T.	2361 Tower Grove Ave., St. Louis
More, Mrs. Edward Anson	Morehaven, Clayton
Morton, Mrs. I. W.	43 Portland Place, St. Louis
Mueller, Mr. Wm. G.	2nd & Washington Aves., St. Louis
Mudd, Dr. Harvey G.,	Humboldt Bldg., St. Louis
Mullin, Mrs. G. Key, A. R. C. Nurse	Sugar Creek,
Municipal Nurses' Board, (Affil.)	209 Municipal Courts Bldg., St. Louis
Nagel, Mrs. Chas.	44 Westmoreland Place, St. Louis
Neff, Dr. Frank C.	900 Rialto Bldg., Kansas City
Newell, Mrs. F. E.	5523 Pershing Ave., St. Louis
Newell, Mrs. Jas. P.	2340 S. 39th St., St. Louis
Nicholson, C. E., Printing Co.	St. Louis
Nims, Mrs. E. D.	56 Portland Place, St. Louis
Nugents,	Broadway & Washington Ave., St. Louis
O'Reilly, Mrs. Archer	6369 Pershing Ave., St. Louis
Pettus, Mrs. H. L.	39 Washington Terrace, St. Louis
Pettus, Mrs. Charles P.	38 Westmoreland Place, St. Louis
Philbrook, Miss Etta F., Office Sec'y., State Tuberculosis Assn.	706 Pontiac Bldg., St. Louis
Pierce, Mrs. Franklin R.	5545 Bartner Ave., St. Louis
Pinder, Miss Ethel G.	4354 Lindell Blvd., St. Louis
Pinkston, Mrs. Louis M.	2821 Francis St., St. Joseph
Reed, Dr. Elizabeth B.	Jefferson City
Renard, Mrs. W.	4 Beverly Place, St. Louis
Roberts, Miss Gladys	1109 Locust St., Columbia

Rothschild, Mr. Sidney	1100 Washington Ave., St. Louis
Rowse, Mrs. E. C.	470 Lake Ave., St. Louis
Russell, Dr. Viola, U. S. Pub. Health Service.	Jefferson City
St. Louis Children's Aid Society, (Affil.)	808 Columbia Bldg., St. Louis
St. Louis Maternity Hospital, (Affil.)	4518 Washington Blvd., St. Louis
St. Louis Pediatric Society, (Affil.)	3525 Pine St., St. Louis
St. Luke's Child Welfare Club, (Affil.)	1843 West Pennway, Kansas City
Saunders, Dr. Edward W.	1541 S. Grand Ave., St. Louis
Schmidt, Mr. Edgar F.	301 Metropolitan Bldg., St. Louis
Schorer, Dr. Edwin H.	825 Lathrop Bldg., Kansas City
Scott, Mrs. Henry C.	31 Westmoreland Place, St. Louis
Selzer, Mr. Irwin	5451 Delmar Ave., St. Louis
Shapleigh, Mr. A. L.	6 Portland Place, St. Louis
Shelton, Mrs. Richard T.	4352 Westminster Place, St. Louis
Shepley, Mr. John F.	53 Portland Place, St. Louis
Shepley, Mrs. John F.	53 Portland Place, St. Louis
Shoemaker, Mrs. W. A.	4386 Westminster Place, St. Louis
Siegel, Mrs. A. J.	5565 Lindell Bldg., St. Louis
Simmons, Mrs. Wallace D.	46 Westmoreland Place, St. Louis
Sinclair Painting Co.	2644 Locust St., St. Louis
Smith, Mrs. Eunice	St. Regis Apts., St. Louis
Stanley, Miss Anna L.	Room 901 Equitable Bldg., St. Louis
Stanley, Miss Louise	1215 Hudson Ave., Columbia
Steedman, Mrs. E. H.	5394 Waterman Ave., St. Louis
Steedman, Mrs. Geo. F.	34 Westmoreland Place, St. Louis
Stenger, Miss Aloys J.	Hellman Bros., St. Louis
Stilwell, Captain Ruth, Salvation Army Home.	St. Louis
Stinde, Mr. E. B.	4944 Lindell Ave., St. Louis
Stix, Mrs. Charles	26 Portland Place, St. Louis
Stoner, Mrs. Stanley	4346 Westminster Place, St. Louis
Stribling, Mrs. Wm. C.	St. Regis Apts., St. Louis
Strobel, Miss Minnie J.	Mound City
Sutton, Dr. Richard L.	1034 Rialto Bldg., Kansas City
Swift, Mr. Fred H.	Vandeventer & Olive Sts., St. Louis
Tanzer, Dr. Hugh G.	508 Commerce Bldg., Kansas City
Thal, Mr. Robert	5153 Washington Ave., St. Louis
Tower, Mrs. Sarah L.	27 Vandeventer Place, St. Louis
Tremble, Mrs. George T.	1400 W. 56th St., Kansas City
Tuttle, Dr. Geo. M.	4917 Maryland Ave., St. Louis
Veeder, Dr. Borden S.	608 Humboldt Bldg., St. Louis
Vrooman, Mr. Claude E.	108 N. 8th St., St. Louis
Volker, Mr. William	303 W. 8th St., Kansas City
Wallace, Mr. Mahlon B.	7th & Spruce Sts., St. Louis
Walthall, Dr. Damon	201 Westover Bldg., Kansas City
Watkins, Mrs. Horton	5879 Cabanne Ave., St. Louis
White, Dr. T. Wistar	Lister Bldg., St. Louis
Wilhelm, Dr. F. E.	1208 Wyandotte Street, Kansas City
Wislezemus, Mr. Fred W.	Wainwright Bldg., St. Louis
Wolff, Mrs. Sigmund	5098 Westminster Place, St. Louis
Woodrow, Mrs. S. H.	28 Windemere Place, St. Louis
Writling, Miss Alma, State Supervising Nurse	
Southwestern Div. A. R. C., Nursing Dept.	St. Louis
Yocum, Miss Katherine R., R. N.	Flat River
Zahorsky, Dr. John	4435 N. Pine Blvd., St. Louis
Zelnicker, Mr. W. A.	Oxford Apts., St. Louis
Zukoski, Mr. C. F.	5153 Cabanne Ave., St. Louis

Montana

Bridge, Mrs. J. W.	Helmville
Montana State Assn. of Graduate Nurses	
(Affil.)	1733 Winnie Ave., Helena

Nebraska

Hamilton, Dr. H. B.	846 Brandeis Theatre Bldg., Omaha
Henske, Dr. Joseph A.	505-7 McCoyne Bldg., Omaha
Jones, Dr. Newell	614 City Nat'l. Bk. Bldg., Omaha
McCabe, Miss Florence, Supt., Visiting Nurse Assn.	505 City Hall, Omaha
McClanahan, Dr. H. M.	507 McCague Bldg., Omaha
Moore, Dr. Clyde	778 Brandeis Bldg., Omaha
Murphy, Prof. J. Harry	614 City Nat'l. Bk. Bldg., Omaha
Sage, Dr. E. C.	2204 St. Mary's Ave., Omaha

Nevada

Brown, Miss Adelaide C., R. N. McGill

New Hampshire

Berlin Mills Company's District Nurse, %Mrs.
 O. B. Brown, Treas. Berlin
 Conner, Miss Daisy M., R. N. Claremont
 Gillette, Miss Lucy W., R. N., Exec. Sec'y.,
 Littleton Chapter, A. R. C. Littleton
 McQuade, Miss Nora, R. N. 368 Lowell St., Manchester
 Woods, Prof. Erville B. Dartmouth College, Hanover

New Jersey

Babies' Hospital, (Affil.). 437 High St., Newark
 Ballinger, Mr. T. Dudley, Health Officer. East Orange
 Barton, Miss Susa B., R. N., Supt Child Hy-
 giene Station 138 Allen St., Trenton
 Black, Dr. Allen B. Paulsboro
 Board of Health Municipal Bldg., Montclair
 Brehat, Miss Elsie Eisner Bldg., Red Bank
 Brown, Mrs. Thacher M. Ballymena, Red Bank
 Browne, Miss Emma L., R. N. 700 Stokes Ave., Collingswood
 Buttenheim, Mrs. Harold S. Madison
 Cammann, Mrs. Oswald N. 40 North Ave., Elizabeth
 Chetwood, Miss Virginia M., R. N., Exec. Sec'y.
 Bergen County Anti-Tuberculosis Assn. McFadden Bldg., Hackensack
 Child Federation of Atlantic City, (Affil.). 100 S. Somerset Ave., Ventnor
 Commission for the Blind, (Affil.). Statehouse, Trenton
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 DeForest, Mr. and Mrs. H. L. 955 Hillside Ave., Plainfield
 DeForest, Miss May 955 Hillside Ave., Plainfield
 Dennis, Dr. L. 49 Ridge St., Orange
 Diet Kitchen of the Oranges, (Affil.). 124 Essex Ave., Orange
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 (Affil.). 268 Montgomery St., Jersey City
 Div. of School Med. Inspection and Welfare
 Nursing, (Affil.). City Hall, Trenton
 Ehrlicher, Miss Charlotte, R. N., 250 E. Hanover St., Trenton
 Free Public Library, (Affil.). East Orange
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 Hummel, Dr. E. G. 414 Cooper St., Camden
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 Lake, Dr. Eva W. Demarest
 Levy, Dr. Julius C., Director, Division of
 Child Hygiene, Department of Health. Newark
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 Mack, Dr. George L. Bound Brook
 Marvel, Dr. Philip 1616 Pacific Ave., Atlantic City
 Moore, Mrs. Paul Hollow Hill Farm, Convent
 New Jersey Congress of Mothers, (Affil.). Moorestown
 Nicholson, Jr., Mrs. Wm. H. 320 S. 2nd St., Millville
 Niemeyer, Dr. Charles V. 19 Fourth St., Weehawken
 Ogden, Mrs. Luther C. Cape May
 Parrish, Miss Charlotte B. 87 S. Main St., Phillipsburg
 Peterson, Dr. C. A. 336 Garden St., Hoboken
 Pierrepont, Mrs. R. S. Far Hills
 Richards, Dr. L. J., Health Officer. City Hall, Elizabeth
 Riha, Dr. Wm. W. 25 West 28th St., Bayonne
 Roebling, Mrs. Karl G. 211 West State St., Trenton
 Shugard, Miss Louise Dorothy 84 Clinton Ave., Newark
 Spurr, Mrs. Joseph G. 500 Mt. Prospect Ave., Newark
 Stern, Dr. Arthur 224 East Jersey St., Elizabeth
 Stoddard, Mrs. Ruby G. 2957 Boulevard, Jersey City
 Thompson, Mrs. Lewis S. 2nd. Ntn'l. Bk. Bldg., Red Bank

Tooker, Miss Mary East Orange
 Turner, Mrs. Ella, R. N. The Aleda Apt., Trenton
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 Wilkes, Dr. LeRoy, Medical Dir. Pub. Schools. Trenton
 VanWinkle, Mrs. Abram 35 Lincoln Park, Newark
 Warner, Dr. G. Van Voris 76 E. Front St., Red Bank
 Wood, Miss Elizabeth T. 563 Church St., Bound Brook

New York

Aikman, Mr. John 184 Alexander St., Rochester
 Aldrich, Mrs. Winthrop W. 23 E. 73rd St., New York
 Allen, Mrs. Fred W. 3 E. 72nd St., New York
 Allen, Dr. Walter C. 1011 N. Goodman St., Rochester
 American Nurses Assn., (Affil.) 370 7th Ave., New York
 Anderson, Miss Lydia E. 461 Washington Ave., Brooklyn
 Andrews, Miss Belle 340 Park Ave., New York
 Andrews, Miss Irene Osgood, Sec'y. Am. Assn.
 for Labor Legislation 131 E. 23rd St., New York
 Appel, Dr. Herman A. Goodridge Av., Riverdale-on-Hudson
 Arnold, Miss Mary 276 Staunton St., New York City
 Arnold, Miss Nathalie 505 Pearl St., New York City
 Asiel, Mrs. Nelson I. Gotham Hotel, New York
 August, Mrs. Harmon S. Chatham Hotel, New York
 Babies' Hospital, (Affil.) 657 Lexington Ave., New York
 Babies' Welfare Federation, (Affil.) 505 Pearl St., New York
 Bachman, Mrs. F. E. Port Henry,
 Baker, Dr. S. Josephine, Chief Bureau of
 Child Hygiene Dept. of Health New York City
 Baldwin, Mr. Roger S. 120 Broadway, New York
 Barnes, Mr. J. Sanford 27 E. 62nd St., New York City
 Batavia Infant Welfare Assn., (Affil.) 24 W. Main St., Batavia
 Bayns, Mrs. Howard 830 Park Ave., New York City
 Bedinger, Mr. George R., Director A. R. C.,
 New York County Chapter 119 W. 40th St., New York City
 Bellevue Hospital, Social Serv. Dept., Child-
 ren's Welfare Division, (Affil.) New York City
 Benson, Dr. Arthur W. 2 St. Paul Place, Troy
 Berwind Free Maternity Clinic, (Affil.) 125 E. 103rd St., New York City
 Biggs, Dr. Herman M., State Commissioner of
 Health 39 W. 56th St., New York City
 Blair, Mrs. Elmer 129 Wadsworth Ave., New York City
 Blakeley, Dr. Stuart B. 69 Walnut St., Binghamton
 Blayden, Mrs. Dexter 41 E. 51st St., New York City
 Bliss, Mrs. C. N., Jr. Westbury, L. I.
 Blayden, Mrs. S. P. 16 E. 10th St., New York City
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 Boardman, Mrs. Francis Riverdale-on-Hudson
 Bogart, Dr. Frank Vander 111 Union St., Schenectady
 Bookstaver, Miss Mabel L. 715 Central Ave., Dunkirk
 Bolen, Miss Grace R., Director, Social Service
 Dept., Sloane Hospital for Women New York City
 Boorn, Miss Myrtle E., R. N. 311 Third Ave., Frankfort
 Bradley, Miss Mary T. 535 Park Ave., New York City
 Brewer, Dr. I. W., Health Officer Watertown,
 Brewster, Mr. George S. 52 Vanderbilt Ave., New York City
 Brooklyn Children's Aid Society, (Affil.) 72 Schermerhorn St., Brooklyn
 Brooklyn Pediatric Society, (Affil.) 4402 12th Ave., Brooklyn
 Brophy, Mrs. E. M. 1545 1st Ave., Watervliet
 Brown, Mr. Robert H. 21 W. 127th St., New York City
 Brown, Mr. Thatcher M. 59 Wall St., New York City
 Browne, Miss Caroline J. 220 Sterling St., Watertown
 Bureau of Child Hygiene, Department of
 Health, (Affil.) Syracuse
 Bureau of Health, Dept., of Public Safety,
 (Affil.) Buffalo
 Bureau of Health, (Affil.) Rochester
 Burritt, Mr. Bailey B. 12 W. 28th St., New York City
 Button, Dr. Lucius L. 265 Alexander St., Rochester
 Caldwell, Dr. William Edgar 58 W. 55th St., New York City
 Calvert, Mrs. John B. Irvington-on-Hudson
 Campbell, Dr. Eleanor A. 26 E. 58th St., New York City
 Canfield, Mrs. George Folger 344 W. 72nd St., New York City

Cantline, Mrs. Peter	10 Central Ave., Newburgh
Carle, Mr. Robert W.	153 Water St., New York City
Chapin, Dr. Henry Dwight	51 W. 51st St., New York City
Child Welfare Committee, (Affil.)	508 E. Genesee St., Syracuse
Child Welfare League of America, (Affil.)	130 E. 22nd St., New York City
Cluett, Mrs. E. H.	Pine Woods Ave., Troy
Cluett, Mrs. Sanford L.	Elm Grove Ave., Troy
Clyde, Mrs. George	1 W. 51st St., New York City
Codding, Dr. E. H.	City Hall, New Rochelle
Coolidge, Dr. Emelyn Lincoln	850 West End Ave., New York City
Crocker, Mrs. George L., Jr.	169 E. 78th St., New York City
Cunningham, Mrs. F., Jr.	140 E. 72nd St., New York City
Darlington, Dr. Thomas	27 Washington Sq., New York City
Darrach, Dr. Wm.	128 E. 60th St., New York City
Darrach, Mrs. Wm.	128 E. 60th St., New York City
Davey, Miss Harriet E.	168 Locust Ave., Amsterdam
Davis, Miss Felice	322 W. 88th St., New York City
Degener, Mr. John F., Jr.	354 4th Ave., New York City
Degener, Mrs. Paul	178 E. 70th St., New York City
Delano, Mr. Moreau	59 Wall St., New York City
Dennett, Dr. Roger H.	120 E. 38th St., New York City
DeSanctis, Dr. Adolph G.	80 Perry St., New York City
DeVictoria, Dr. C. Lopez	965 Lexington Ave., New York City
Dieftenthaler, Mrs. Charles R.	303 W. 91st St., New York City
District Nursing Assn. of Buffalo, (Affil.)	181 Franklin St., Buffalo
Dodge, Mrs. Cleveland E., Jr.	Riverdale-on-Hudson
Donnelly, Dr. W. H.	178 Woodruff Ave., Brooklyn
Downes, Dr. Wm. A.	424 Park Ave., New York City
Draper, Miss Martha Lincoln	125 E. 36th St., New York City
DuBois, Miss Grace M., R. N.	45 W. Main St., Johnstown
Dunham, Mrs. Edward K.	35 E. 88th St., New York City
Eddy, Mr. Wm. H.	37 Wall St., New York City
Elliott, Dr. Edsall D. B.	Glen Falls
Emerson, Dr. Haven	120 E. 62nd St., New York City
Faust, Dr. Otto A.	817 Madison Ave., Albany
Fayerweather, Mrs.	New Lebanon, Columbia County
Fearrey, Mrs. Morton L.,	Garden City, L. I.
Flagler, Mrs. Harry H.	32 Park Ave., New York City
Fleischmann, Mrs. C. M.	1 Madison Ave., New York City
Folks, Mr. Homer	105 E. 22nd St., New York City
Francis, Mrs. Arthur N.	119 E. 56th St., New York City
Franklin, Mrs. S. S.	23 E. 38th St., New York City
Freeman, Miss Dorothy	Riverdale-on-Hudson
Freeman, Miss Katherine	Riverdale-on-Hudson
Freeman, Dr. Rowland G.	211 W. 57th St., New York City
Fronezak, Dr. Francis F., Health Comm.	Municipal Bldg., Buffalo
Frothingham, Mrs. T. E.	2 E. 75th St., New York City
Galland, Dr. Wm. H.	Glengary Hall, Croton-on-Hudson
Gebhart, Mr. John C., Dir. Dept. of Family Welfare, N. Y. A. I. C. P.	105 E. 22nd St., New York City
Geister, Miss Janet, R. N.,	158 5th Ave., New York City
Geller, Mrs. Fred	Bronxville
Gilder, Mrs. Rodman	898 Madison Ave., New York City
Gilllett, Miss Lucy H.	105 E. 22nd St., New York City
Godfrey, Miss Hazel L., R. N.	5 Andes Ave., Utica
Gold, Mr. Cornelius B.	45 West 35th St., New York City
Goodrich, Miss Annie W., Teachers' College, Columbia University	New York City
Grace, Mrs. J. F.	Manhasset, L. I.
Grant, Mrs. U. S., 3rd	993 5th Ave., New York City
Green, Mrs. Ashbel	Mount Kisco
Green, Dr. Leo	44 E. 75th St., New York City
Hagedorn, Dr. A. C.	1st Ave., Gloversville
Halsey, Dr. Robert H.	152 W. 58th St., New York City
Harder, Mrs. Lewis F.	Claesvack
Hare, Mrs. Montgomery	109 E. 64th St., New York City
Harper, Dr. Paul T.	855 State St., Albany
Hart, Dr. Hastings H., Director Russell Sage Fdn. Dept. Child Helping	130 E. 22nd St., New York City
Hawkins, Dr. Norman L.	Watertown
Haynes, Dr. Royal Storrs	140 W. 58th St., New York City
Hazard, Mrs. Frederick Rowland	Syracuse

Health Service Department, N. Y. County	
Chapter A. R. C., (Affil.)	119 W. 40th St., New York City
Heiman, Dr. Henry	64 W. 85th St., New York City
Hellman, Dr. Milo	40 E. 41st St., New York City
Henry Street Settlement, (Affil.)	265 Henry St., New York City
Hess, Dr. Alfred F.	16 W. 86th St., New York City
Higgins, Mr. Chas M.	101 9th Ave., Brooklyn
Hill, Mr. Nicholas S., Jr.	112 E. 19th St., New York City
Hirsh, Mrs. A. B.	71 W. 94th St., New York City
Hitch, Mrs. Frederick Delano	Newburg
Hoe, Mrs. Richard March	11 E. 71st St., New York City
Holden, Mrs. Edwin B.	323 Riverside Drive, New York City
Hollingshead, Dr. Frances M.	808 Marine Trust Bldg., Buffalo
Holt, Dr. L. Emmett	14 W. 55th St., New York City
Homer, Madame Louise	30 W. 74th St., New York City
Hooker, Dr. Ransom S.	175 E. 71st St., New York City
Hoopes, Mr. Maurice	Glens Falls
Hoover, Mr. Herbert	42 Broadway, New York City
Hornblower, Mrs. George S.	755 Park Ave., New York City
Howe, Dr. Wm. A., State Education Dept.	Albany
Huntington, Rev. Henry S.	70 5th Ave., New York City
Infants and Child's Welfare League, (Affil.)	31 Division St., Amsterdam
The A. Jacobi Div. for Children of the Lenox Hill Hospital, (Affil.)	136 W. 87th St., New York City
James, Dr. Walter B.	7 E. 70th St., New York City
James C. Farrell Memorial, (Affil.)	735 Broadway, Albany
Jean, Miss Sally Lucas	156 5th Ave., New York City
Johnson, Mr. and Mrs. Burgess	Raymond Ave., Poughkeepsie
Kahrs, Dr. Grace M.	170 W. 74th St., New York City
Kaiser, Dr. Albert D.	29 Buckingham St., Rochester
Kelly, Miss Irene M.	615 6th St., Watervliet
Kerley, Dr. Charles G.	132 W. 81st St., New York City
Kerr, Dr. J. W., Chief Medical Officer U. S. Public Health Service	Ellis Island
Keyes, Miss Agnes F.	Southampton, L. I.
Keyes, Dr. Edward L.	109 E. 34th St., New York City
Kirk, Dr. W. E. J.	1646 E. 8th St. Brooklyn
Kosmak, Dr. George W.	23 E. 93rd St., New York City
Kouwenhoven, Dr. John B.	419 Palisade Ave., Yonkers
Kridel, Miss Elsie W.	135 Central Park W., New York City
LaFetra, Dr. Linnaeus F.	113 E. 61st St., New York City
Lambert, Mrs. Adrian V. S.	168 E. 71st St., New York City
Lenz, Mrs. George	68 Bleeker St., Gloversville
Leo-Wolf, Dr. Carl G.	481 Franklin St., Buffalo
Liebmann, Mr. Alfred	525 Park Ave., New York City
Livingston, Mrs. Henry H.	148 W. 11th St., New York City
Ludlum, Dr. Walter D.	362 Marlborough Road, Brooklyn
Lynch, Mr. Frederick	70 5th Ave., New York City
MacFarlane, Dr. Andrew	274 State St., Albany
McClure, Mrs. Archibald	284 State St., Albany
McLean, Miss A. Genevieve	139 E. 40th St., New York City
McLane, Mr. Thomas S.	47 E. 80th St., New York City
McLean, Mrs. Stafford	17 E. 71st St., New York City
Marling, Mr. Alfred E.	35 W. 47th St., New York City
Martin, Miss Lois W.	178 E. 64th St., New York City
Maternity Center Assn., (Affil.)	18 W. 34th St., New York City
Mathesius, Mrs. Frederick J., Jr.	255 W. 91st St., New York City
Merrill, Mrs. C. E., Jr.	925 Park Ave., New York City
Merrill, Mrs. E. G.	Bedford Hills
Metropolitan Life Insurance Co., Industrial Dept., (Affil.)	New York City
Mettler, Mrs. John Wyckoff	201 W. 57th St., New York City
Miller, Dr. George N.	Rhinebeck, Dutchess County
Miller, Mrs. James Alex.	375 Park Ave., New York City
Miller, Mrs. McNaughton	158 Chestnut St., Albany
Mitchell, Mrs. Wesley Clair	37 W. 10th St., New York City
Mixsell, Dr. Harold R.	134 E. 76th St., New York City
Moffett, Dr. Rudolph Duryea	70 E. 77th St., New York City
Mudge, Mrs. Gertrude Gate	New Brighton, S. I.
Murdoch, Mrs. Ray A.	Port Henry
Murray, Miss Anna E., R. N.	106 Morningside Drive, N. Y. City
National Child Welfare Assn., (Affil.)	70 50th Ave., New York City
Nat'l. Federation of Day Nurseries, (Affil.)	289 4th Ave., New York City

National League of Nursing Education, (Affil.)	370 7th Ave., New York City
Nat'l Org. for Public Health Nursing, (Affil.)	370 7th Ave., New York City
National Tuberculosis Association, (Affil.)	381 4th Ave., New York City
Nelson, Mrs. John P.	75 Minaville St., Amsterdam
N. Y. Assn. for Improv. Condition of Poor, (Affil.)	105 E. 22nd St., New York City
New York Diet Kitchen Assn. (Affil.)	33 W. 42nd St., New York City
Nichols, Mr. Acosta	25 Broad St., New York City
Niles, Mrs. Charles L.	81 Minaville St., Amsterdam
Noon, Miss Winifred F., R. N.	426 E. 26th St., New York City
Nuckols, Mrs. Claude C.	Menands, Albany
O'Leary, Dr. Arthur J.	545 E. 167th St., New York City
Owen, Miss Gertrude G., Albany Co. Chapter A. R. C.	Albany
Parry, Dr. Angenette	154 E. 37th St. New York City
Parsons, Miss Elizabeth	Phelps St., Gloversville
Patterson, Dr. H. S.	130 E. 62nd St., New York City
Peabody, Mr. George Foster	Saratoga Springs
Pease, Mr. Marshall Carleton, Jr.	155 E. 62nd St., New York City
Perkins, Miss Frances, State Dept of Labor.	230 5th Ave., New York City
Perkins, Mrs. George W.	Riverdale-on-Hudson
Piereson, Dr. Richard M.	447 W. 59th St., New York City
Platt, Mr. H. B.	535 Park Ave., New York City
Podmore, Mr. J. W. F.	1535 5th Ave., Watervliet
Porter, Mrs. Arthur Tappan, Supt., The Day Home	1600 7th Ave., Troy
Potter, Miss Blanche	140 E. 56th St., New York City
Potter, Mrs. E. A. Jr.	125 E. 72nd St., New York City
Potter, Dr. Philip S.	213 Westminster Ave., Syracuse
Pratt, Mrs. Frederick W.	7 Kraft Ave., Bronxville
Pratt, Mrs. John T.	7 E. 61st St., New York City
Pratt, Mrs. Mary Seymour	241 Clinton Ave., Brooklyn
Prentice, Mrs. John H.	23 E. 69th St., New York City
Presbyterian Hospital, Out-Patient Dept., (Affil.)	41 E. 70th St., New York City
Price, Mrs. O. J.	326 Barrington St., Rochester
Race, Miss Ethel V., R. N.	160 E. 26th St., New York City
Rambo, Dr. Wm. S.	43 N. Plymouth Ave., Rochester
Raymond, Miss Anne L.	156 5th Ave., New York City
Rennert, Miss Elizabeth, R. N., State Dept. of Health	Albany
Rice, Mrs. Wm. B.	17 West 16th St., New York City
Richmond, Mrs. L. M.	19 Bowne Ave., Flushing
Rickards, Mr. B. R.	35 S. Manning Blvd., Albany
Richardson, Dr. Frank Howard	102 Hanson Place, Brooklyn
Richardson, Mrs.	1149 Park Ave., New York City
Riverdale Health League (Affil.)	Riverdale-on-Hudson
Robinson, Mrs. Theodore Douglas	Mohawk, Herkimer Co.
Roosevelt, Mrs. Franklin H.	49 E. 65th St., New York City
Rose, Dr. M. Edgar	940 Park Ave., New York City
Rosenbaum, Mr. S. G.	207 West 24th St., New York City
Ross, Miss Mary J.	Binghamton
Routzahn, Mr. E. G.	130 E. 22nd St., New York City
Roy, Mrs. E. F.	1437 Broadway, Watervliet
Royall, Miss Mary Aylett	Riverdale, New York City
Rucker, Dr. Augusta	120 E. 34th St., New York City
Russell, Mrs. Marshall	630 Park Ave., New York City
Sage, Mrs. H. W.	Menands Road, Albany
Sage, Mrs. Isabel W.	Menands Road, Albany
St. Mary's Maternity Hospital and Infant Asylum, (Affil.)	1601 Court St., Syracuse
Salvage, Mrs. S. A.	155 Maple Ave., Flushing
Sanderson, Dr. Raymond	75 Market St., Poughkeepsie
Sands, Dr. Georgiana	Port Chester
Sanford, Mrs. F. E.	630 W. 116th St., New York City
Santry, Dr. A. B.	Little Falls
Schloss, Dr. Oscar M.	1319 Madison Ave., New York City
Schwartz, Miss Marie	84 Elm St., Gloversville
Schwarz, Dr. Herman	22 E. 76th St., New York City
Schwarzenbach, Mr. Robt. J. F.	470-78 4th Ave., New York City
Sears, Miss H. M.	289 4th Ave., New York City
Seward, Mr. W. R.	218 Alexander St., Rochester

Seymour, Miss Gertrude, U. S. Pub. Health Service	313 Custom House, New York City
Shaw, Dr. H. L. K.	361 State St., Albany
Shippen, Miss Ettie	301 Lexington Ave., New York City
Shuttleworth, Mrs. Arthur W.	317 Guy Park Ave., Amsterdam
Silverman, Dr. A. Clement	Physicians Bldg., Syracuse
Slade, Mr. Francis Louis	115 Broadway, New York City
Slattery, Rev. John T.	500 23rd St., Watervliet
The Sloan Hospital for Women, (Affil.)	447 W. 59th St., New York City
Sloane, Mrs. William	686 Park Ave., New York City
Smeallie, Mrs. P. H.	159 Marlat St., Amsterdam
Smith, Dr. Charles Hendee	66 W. 55th St., New York City
Smith, Dr. Cornell	312 Hawley Ave., Syracuse
Smith, Mrs. James W.	37 Belle Ave., Troy
Solomon, Mrs. Arthur L.	Crestwood
The Solvay Circle, %Solvay Process Co., (Affil.)	Syracuse
Southworth, Dr. Thomas S.	807 Madison Ave., New York City
State Charities Aid Association, (Affil.)	105 E. 22nd St., New York City
Steinway, Mrs. Theodore	119 E. 39th St., New York City
Stern, Mrs. E. H.	150 W. 79th St., New York City
Stevens, Miss Anne A., R. N. Chief Nurse, Maternity Center Association	18 W. 34th St., New York City
Stillman, Dr. E. G.	17 E. 72nd St., New York City
Stillman, Miss Mildred W.	35 E. 39th St., New York City
Stirling, Mrs. Thomas H.	Mechanicville
Stout, Mrs. A. V.	129 E. 55th St., New York City
Straight, Mrs. Willard	Old Westbury, L. I.
Strauss, Mr. Frederick, %J. V. W. Seligman & Co.	New York City
Studdiford, Dr. Wm. E., Sloane Hospital for Women	New York City
Sub-Committee for Mothers & Infants N. Y. State Charities Aid Assn., (Affil.)	105 E. 22nd St., New York City
Tatham, Mrs. Edwin	Katonah
Teele, Mr. Trevor	194 Grand Ave., Saratoga Springs
Titsworth, Mr. Frederick S.	8 E. 9th St., New York City
Titus, Dr. Henry W.	106 Central Ave., New Rochelle
The Troy Woman's Club	9 Lake Ave., Troy
Van Baeren, Mr. F. T., Jr.	812 Park Ave., New York City
Van Blarcom, Miss Carolyn C.	149 E. 40th St., New York City
Van Ingen, Miss Anne H.	9 E. 71st St., New York City
Van Ingen, Mrs. E. H.	9 E. 71st St., New York City
Van Ingen, Mrs. McLane	1081 5th Ave., New York City
Van Ingen, Dr. Philip	125 E. 71st St., New York City
Visiting Nurse Assn. of Brooklyn, (Affil.)	78 Schermerhorn St., Brooklyn
Wadsworth, Mrs. Augustus B.	327 State St., Albany
Waldron, Dr. Louis V., Director Child Hygiene Bureau of Health	Yonkers
Wallace, Dr. Charlton	507 Madison Ave., New York City
Walter, Mr. Wm. I.	52 Broadway, New York City
Watertown Visiting Nurse Assn. (Affil.)	118 Park Place, Watertown
Weld, Mrs. Philip B.	Knickerbocker Club, New York City
Wertheim, Mrs. Jacob	182 W. 58th St., New York City
White, Mrs. Alex. M.	52 Remsen St., Brooklyn
White, Miss Frances E.	2 Pierrepont Place, Brooklyn
White, Mrs. Harold T.	Bedford Hills
White, Miss V. M.	146 Central Park W., New York City
Widdemer, Mr. Kenneth D.	119 W. 40th St., New York City
Wilcox, Dr. Herbert B.	39 E. 75th St., New York City
Wile, Dr. Ira S.	230 W. 97th St., New York City
Wiles, Mrs. Thomas S.	39 Chaulton St., New York City
Wilkes, Dr. Dorothy	4703 12th Ave., Brooklyn
Willcox, Mrs. Wm. G.	115 Davis Av., W. New Brighton, S.I.
Willcox, Prof. Walter F.	Cornell University, Ithaca
Williams, Mr. and Mrs. Blair S.	25 Broad St., New York City
Williams, Mrs. Emma McC.	282 State St., Albany
Williamson, Mrs. F. E.	Riverdale-on-Hudson
Williams, Dr. Linsly R.	141 E. 71st St., New York City
Williams, Mrs. Louise B., R. N.	209 Ellicott St., Batavia
Williams, Mr. Roger H.	31 Nassau St., New York City
Williams, Mr. Stephen G.	1155 Park Ave., New York City
Wiseman, Dr. Joseph R.	705 E. Genesee St., Syracuse

Witherbee, Mrs. Silas H.	Port Henry
Witherby, Mrs. E. C.	Syracuse
Witherspoon, Dr. Charles R.	20 Dartmouth St., Rochester
Wood, Dr. Thomas D.	Columbia University, New York City
Woodward, Mrs. Daniel D.	Granville, Washington County
Wynkoop, Dr. E. J.	401 James St., Syracuse
Ziegler, Mrs. Henry	Woodmere, L. I.

North Carolina

Risch, Dr. Louis F.	Haywood Bldg., Asheville
Cain, Miss Effie E., R. N.	1206 S. Fulton St., Salisbury
Carlton, Dr. R. L., Health Officer	City Hall, Winston-Salem
Ehrenfeld, Miss Rose M., R. N., Director, Bureau of Pub. Health Nursing and Infant Hygiene, N. C. State Board of Health	Raleigh
Faison, Dr. I. W.	408-9-10 Realty Bldg, Charlotte
Hayden, Mrs. Dorothy, Guilford County Public Health Nurse	Greensboro
Rankin, Dr. W. S., Sec'y State Bd. of Health ..	Raleigh
State Board of Health (Affil.) ..	Raleigh
Wyche, Miss Mary	Greensboro

North Dakota

Brandt, Dr. A. M.,	Bismarck
Dillon, Dr. Jos. G.	620 Front St., Fargo

Ohio

Abbott, Mr. Gardner T.	1215 Williamson Bldg, Cleveland
Adelbert College Library, (Affil.) ..	Western Reserve Univ., Cleveland
Associated Charities, (Affil.) ..	2182 E. 9th St., Cleveland
Austin, Dr. Richard S.	General Hospital, Cincinnati
Babies' Dispensary and Hospital, (Affil.) ..	2500 E. 35th St., Cleveland
Babies' Milk Fund Assn., Out-Patient Dis- pensary, Gen'l Hospital (Affil.) ..	Cincinnati
Baldwin, Mr. and Mrs. Arthur D.	9534 Lake Shore Blvd., Cleveland
Baldwin, Dr. W. S.	424 Broadway, Lorain
Bell, Dr. Albert J.	7th & Race Sts. Cincinnati
Benjamin, Dr. Julien E.	4 W. 7th St., Cincinnati
Bentley, Dr. James M.	Groton Bldg., Cincinnati
Bentley, Mrs. Robert	718 Wick Ave., Youngstown
Bill, Dr. Arthur	1804 E. 93rd St., Cleveland
Board of Health, (Affil.) ..	Cleveland
Brown, Mr. Alex. C.	1625 Hazel Drive, Cleveland
Calfee, Mr. R. M.	1608 Williamson Bldg., Cleveland
Carr, Dr. Edmund C.	4221 1/2 Main St. Coshocton
Cassidy, Miss Laura B., R. N.	Harrison, Ohio
Catherine Horstmann Home, (Affil.) ..	West Park, Cleveland
Catholic Charities Office, (Affil.) ..	Standard Theatre Bldg., Cleveland
Children's Aid Society, (Affil.) ..	10427 Detroit Ave., Cleveland
Children's Fresh Air Camp, (Affil.) ..	11007 Buckeye Road, Cleveland
Clark, Miss Hazel G.	433 W. Court St., Cincinnati
Cleave, Miss K. Frances	City Hospital, Bellaire
Cleveland Christian Orphanage, (Affil.) ..	10907 Lorain Ave., Cleveland
Cleveland Day Nursery and Free Kinder- garten Assn., (Affil.) ..	2050 E. 96th St., Cleveland
Cleveland Federation of Woman's Clubs, (Affil.) ..	1830 E. 97th St., Cleveland
Cleveland Humane Society, (Affil.) ..	City Hall, Cleveland
Cleveland Mouth Hygiene Association, (Affil.) ..	Schofield Bldg., Cleveland
Cleveland Protestant Orphan Asylum, (Affil.) ..	5000 St. Clair Ave., Cleveland
Cleveland Welfare Federation, (Affil.) ..	707 Electric Bldg., Cleveland
Collier, Mrs. Allen	108 E. Auburn Ave., Cincinnati
Cushing, Mrs. Edward F.	9819 Lake Shore Blvd., Cleveland
Epstein, Dr. J. W.	210 Reserve Bldg., Cleveland
Federation of Jewish Charities, (Affil.) ..	1529 Guardian Bldg., Cleveland
Felss, Mrs. Paul L.	11452 Euclid Ave., Cleveland
Sister M. Francis, R. N.	3409 Woodland Ave., Cleveland
Free Dental Clinic Society, Guilford School (Affil.) ..	4th & Ludlow Sts., Cincinnati
Friedley, Miss Ray S.	64 Grand Ave., Akron

Friend, Mrs. J. E.	2229 Frances Lane, Cincinnati
Furrer, Dr. Arnold F.	1110 Euclid Ave., Cleveland
Galt, Mrs. Wm., Jr.	Glendale, Cincinnati
Gerstenberger, Dr. H. J.	1940 Noble Road, Cleveland
Goehle, Dr. Otto L.	Medical Bldg., Lakewood
Grandin, Mrs. G. W.	Magnolia Drive, Cleveland
Graver, Dr. Joseph	1082 S. Main St., Akron
Greene, Mr. and Mrs. Edward B.	10831 Magnolia Drive, Cleveland
Greenbaum, Dr. J. Victor	4 W. 7th St., Cincinnati
Hackney, Mrs. L. J.	4 Dexter Place, Cincinnati
Hamann, Dr. C. A.	416 Osborn Bldg., Cleveland
Hanna, Mr. H. M. (deceased)	2417 Prospect Ave., Cleveland
Hanna, Mrs. Howard M., Jr.	Station H., Cleveland
Harvey, Mr. M. C.	215 Cuyahoga Bldg., Cleveland
Harvey, Mr. P. W.	9619 Lake Shore Blvd., Cleveland
Herrick, Mrs. F. C.	2211 Harcourt Drive, Cleveland
Home of the Holy Family, (Affil.)	West Park, Cleveland
Hoover, Dr. C. F.	702 Rose Bldg., Cleveland
Hopkins, Dr. Blanche, Asst. Bureau of Child Hygiene, State Department of Health.	Columbus
Hord, Mrs. John	1929 E. 75th St., Cleveland
Howell, Dr. J. Morton	Riebold Bldg., Dayton
Instructive District Nursing Assn., (Affil.)	276 E. State St., Columbus
Ireland, Mrs. Robt. L.	Lake Shore Blvd., Cleveland
Irdell, Mrs. C. J.	771 N. Crescent Ave., Cincinnati
Johnson, Miss Lucia B.	1010 Hartman Bldg., Columbus
Jones Home, (Affil.)	3518 W. 25th St., Cleveland
Kingsley, Mr. Sherman C., Secy. Cleveland Welfare Federation	Cleveland
Kull, Miss Mary S.	Marion
Lamb, Dr. Frank H.	940 E. McMillan St., Cincinnati
Latham, Dr. Edgar M.	1051 Dorr St., Toledo
Leslie, Dr. Hugh J.	3084 E. Overlook Rd., Cleveland
Low, Mrs. Martin	2229 Francis Lane, Cincinnati
Lurie, Dr. Louis A.	789 Greenwood Ave., Cincinnati
Mather, Mrs. A. S.	10723 E. Boulevard, Cleveland
Mather, Mr. Samuel	Western Reserve Bldg., Cleveland
Merrill, Miss Natalie, Chief, Bureau of Child Hygiene, State Dept. of Health.	Columbus
Morgenroth, Dr. S.	202 Everett Bldg., Akron
Ohio Society for Crippled Children, (Affil.)	East River & Broad Sts., Elyria
Ohio State Assn. of Graduate Nurses, (Affil.)	General Hospital, Cincinnati
Peskind, Dr. A.	2414 E. 55th St., Cleveland
Peters, Dr. A. O., Commissioner of Health.	Dayton
Peters, Dr. Wm. H., Health Commissioner.	Cincinnati
Phillips, Dr. John	The Union Bldg., Cleveland
Pogue, Mrs. S. F.	Keys Crescent, Cincinnati
Pollak, Mrs. Maurice E.	1026 Redway Ave., Cincinnati
Postle, Mrs. Kathryn	335 Pearl St., Marion
Prescott, Mrs. O. W.	3085 Fairmount Blvd., Cleveland
Protestant Home for Friendless and Foundlings, (Affil.)	433 N. Court St., Cincinnati
Public Health Federation, (Affil.)	804 Neave Bldg., Cincinnati
Rachford, Dr. B. K.	1961 Madison Road, Cincinnati
Rauh, Dr. Sidney J.	54 Harrison Bldg., Cincinnati
Rees, Mrs. William	3624 Euclid Ave., Cleveland
Roach, Miss Maude	433 W. Court St., Cincinnati
Rosenthal, Mrs. Wm.	781 N. Crescent Ave., Cincinnati
Ruh, Dr. H. O.	503 Osborn Bldg., Cleveland
St. Ann's Maternity Hospital, (Affil.)	3409 Woodland Ave., Cleveland
St. John's Orphanage, (Affil.)	2619 Franklin Ave., Cleveland
St. Joseph's Orphan Asylum, (Affil.)	6421 Woodland Ave., Cleveland
St. Vincent's Orphan Asylum, (Affil.)	3315 Monroe Ave., Cleveland
Salvation Army Rescue Home, (Affil.)	5905 Kinsman Road, Cleveland
Schaengold, Mr. Ben	423 Vine St., Cincinnati
Selbert, Mrs. Louis, R. N., College of Med.	State University, Columbus
Sellenings, Dr. O. H.	1773 E. Rich St., Columbus
Shaw, Miss Cora G., R. N.	1494 Addison Rd. Suite 8, Cleveland
Sherwin, Miss Belle	Windon, Willoughby
Shuff, Mrs. John L.	2518 Salem Ave., E.W.H., Cincinnati
Silver, Mrs. M. T.	1725 Magnolia Drive, Cleveland
Thomas, Dr. J. J.	1110 Euclid Ave., Cleveland
Toledo District Nursing Assn., (Affil.)	1517 Monroe St., Toledo

The United Jewish Social Agencies, (Affil.)	731 W. Sixth St., Cincinnati
VanNes-Lippelman, Miss Bertha	Glendale
Visiting Nurse Association, (Affil.)	102 E. Front St., Youngstown
Visiting Nurse Assn. of Cincinnati, (Affil.)	220 West 7th Ave., Cincinnati
Visiting Nurse Assn. of Cleveland, (Affil.)	2157 Euclid Ave., Cleveland
Wade, Mr. J. H.	3903 Euclid Ave., Cleveland
Wason, Mrs. Charles W.	2472 Overlook Road, Cleveland
White, Mrs. W. T.	Station H., Cleveland
Wolfenstein, Dr. S. (deceased)	1624 Compton Rd. Cleveland Heights
Womer, Miss M. Edna, R. N., The Visiting Nurse Association	Youngstown
Wright, Miss Nellie B., %Guernsey Co., Chapter, A. R. C.	Cambridge
Wyckoff, Dr. W. C.	503 Osborn Bldg., Cleveland

Oklahoma

Bates, Mrs. Charles F.	215 S. 15th St., Muskogee
Beckett, Miss Hazel, R. N.	607 E. 15th St., Okmulgee
Oklahoma Public Health Association, (Affil.)	Oklahoma Bldg., Oklahoma City
Schevitz, Mr. Jules, Gen'l Sec'y., State Tuberculosis Assn.	Oklahoma Bldg., Oklahoma City
Taylor, Dr. W. M.	511 1st Nat. Bk. Bldg. Oklahoma City
Wait, Miss Bernice	412 West St., Stillwater

Oregon

Beardsley, Dr. G. S.	Eugene
Bilderback, Dr. J. B.	903 Corbett Bldg., Portland
Brems, Miss Margaret, R. N.,	Bend
Clark, Dr. D. G.	Harrisburg
Kimball, Mrs. F. B.	R. F. D. No. 2, Hood River
Moore, Dr. C. Ulysses	915 Corbett Bldg., Portland
Oregon State Library, (Affil.)	Salem
Ottenheimer, Mrs. H. J.	94 N. 21st St., Portland
Prentiss, Mrs. Sarah W.	149 Kings Road Corvallis
Rockey, Mrs. Eugene	R. F. D. No. 1 Rockholm, Oswego
Rockey, Mrs. Paul	Rockholm, Oswego
Seller, Mrs. F. M.	795 Flanders, Portland
Thomson, Miss Elnora E.	652 Courthouse, Portland
University of Oregon Library, (Affil.)	Eugene
Visiting Nurse Association, (Affil.)	1004 Spalding Bldg., Portland

Panama

Brakemeier, Miss Louise, Directress of Baby Welfare Work, National R. C. of Panama	Rep. de Panama
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Pennsylvania

Adams, Mr. Marcellin C.	5836 Fifth Ave., Pittsburgh
Allen, Mrs. Hugh Pendleton	Homewood, Pittsburgh
Andrews, Mrs. J. C.	5847 Hampton St., Pittsburgh
Arbuthnot, Dr. Thomas S., Dean School of Medicine	Pittsburgh
Armstrong, Mr. C. Dudley	Sewickley, Pittsburgh
Armstrong, Mr. D. C.	Armstrong Cork Co., Pittsburgh
Atlee, Mrs. John L.	129 East Orange St., Lancaster
Baby Health Station of Bethlehem, (Affil.)	2nd & Polk Sts., South Bethlehem
Babies' Hospital (Affil.)	Bellaire
Bacon, Dr. Emily P.	117 S. 20th St., Philadelphia
Bailey, Mr. Reade W.	921 College Ave., Pittsburgh
Bain, Mrs. Henry, Jr.	Haverford
Bairstow, Miss Joy, R.N., Phila. Gen. Hospital	Philadelphia
Baker, Mrs. Charles G.	34 N. Lime St., Lancaster
Batt, Dr. Wilmer R., Registrar of Vital Statistics, State Department of Health	Harrisburg
Beardsley, Mrs. E. F. G.	258 S. 16th St., Philadelphia
Belin, Mrs. Henry, Jr.	447 Jefferson Ave., Scranton
Bleichschmidt, Mr. J.	100 S. 51st St., Philadelphia
Blitzstein, Dr. Rosalie M.	4123 Girard Ave., Philadelphia
Block, Mrs. George	1518 N. 17th St., Philadelphia
Bok, Mrs. Edward	Merion
Borden, Mrs. Edith	618 S. Washington Square, Phila.
Bradley, Dr. Wm. N.	1725 Pine St., Philadelphia
Brazier, Miss E. Josephine	1808 Pine St., Philadelphia

Brown, Mr. James Crosby	4th & Chestnut Sts., Philadelphia
Brown, Mrs. W. Harry	5742 5th Ave., Pittsburgh
Browne, Mr. D. L.	604 Union Natn'l Bk. Bldg., Pittsburgh
Bruner, Dr. Henry G.	542 N. 11th Street, Philadelphia
Bryn Mawr College Library, (Affil.)	Bryn Mawr
Burdick, Miss Helen B.	3 Von Lent Place, Pittsburgh
Burdick, Mrs. J. N.	906 Amberson Ave., Pittsburgh
Burns, Miss Margaret R., R. N.	64 Moyallen St., Wilkes-Barre
Bush, Miss S. Gertrude, R. N., Supervisor	Pub. Health Nursing, Co. Chapter, A. R. C. Clarion
Caldwell, Mrs. James Emmott	Bryn-Mawr
Calley, Miss Martha S.	4234 Pine St., Philadelphia
Caner, Mrs. Harrison K.	1707 Walnut St., Philadelphia
Carpenter, Dr. Howard Childs	1805 Spruce St., Philadelphia
Cartin, Dr. H. J.	100 Main St., Johnstown
Chalfant, Mrs. Henry	915 Ridge Ave., Pittsburgh
Chalfant, Mrs. John W.	5818 Howe St., Pittsburgh
Chalfant, Dr. Sidney A.	7048 Jenkins Arcade, Pittsburgh
Child, Dr. Dorothy	McKean Ave., Germantown, Phila.
The Child Federation, (Affil.)	200 South Juniper St., Philadelphia
Child Health Center, (Affil.)	Chester
Child Welfare Society, (Affil.)	3023 1/2 E. Washington St., New Castle
Childers, Mr. Charles E. E.	811 Park Bldg., Pittsburgh
Children's Hospital, (Affil.)	Philadelphia
Clafin, Mrs. C. B.	5211 Drexel Road, Philadelphia
Clark, Mr. Herbert L.	321 Chestnut St., Philadelphia
Clayton, Miss Lillian, Phila. Gen. Hospital	Philadelphia
Clemson, Mrs. Daniel M.	6200 Fifth Ave., Pittsburgh
Clifford, Mrs. T. C.	816 S. Negley Ave., Pittsburgh
Clothier, Mrs. Walter	Wynnewood
Clothier, Mrs. William Jackson	Wynnewood
Cogill, Dr. Lida Stewart	1831 Chestnut St., Philadelphia
Coleman, Miss Fanny B.	Lock Box 233, Lebanon
Coles, Dr. Stricker	2103 Walnut St., Philadelphia
Colket, Miss Mary Walker	258 South 18th St., Philadelphia
Collord, Mrs. George L.	Sharon
Colton, Mrs. Sabin W., Jr.	Bryn Mawr
Coon, Mr. C. Melvin	214 S. Main St., Athens
Cowdrey, Mrs. Thomas O.	428 Denniston Ave., Pittsburgh
Curry, Mrs. Grant	Coroapolis
Dagette, Dr. A. S.	400 S. Craig St., Pittsburgh
Darlington, Mrs. Joseph G.	1830 S. Rittenhouse Square, Phila.
Debert, Mrs. Grant	130 S. Fairmount Ave., Pittsburgh
Dick, Dr. L. H.	21 North 9th St., Darby
Dieson, Miss Alma, General Hospital	Philadelphia
Diller, Dr. Theodore	Westinghouse Bldg., Pittsburgh
Diven, Dr. John	2038 Chestnut St. Philadelphia
Dohan, Mrs. Joseph M.	3715 1/2 Chestnut St., Philadelphia
Dorsey, Miss Nan L., R. N., Public Health	Nursing Assn.
Dranga, Dr. Amelia A.	903 Jones Law Bldg., Pittsburgh
DuPont, Mrs. Pierre S.	706 Lyceum Bldg., Pittsburgh
Eagle, Mrs. Robert F.	Kennett-Square, Chester County
Earnshaw, Dr. Henry C.	The Covington, West Philadelphia
Eaton, Dr. Percival J.	Morris Ave., Bryn Mawr
Edwards, Dr. Ogden M., Jr.	715 N. Highland Ave., Pittsburgh
Elterich, Dr. Theodore J.	2003 Commonwealth Bld., Pittsburgh
Emmerling, Dr. Karl	724 Highland Bldg., Pittsburgh
Erb, Mrs. F. O.	1018 Highland Bldg., Pittsburgh
Evans, Mrs. Geo. B.	113 McKinley Ave., Lansdowne
Feamster, Miss Ophelia M., R. N.	223 N. 34th St., Philadelphia
Febiger, Miss Mary S.	140 N. 15th St., Philadelphia
Federation of Jewish Philanthropies, (Affil.)	3421 Powelton Ave., Philadelphia
Fell, Miss Edith Newell	601 Washington Trust Co., Bldg., Pittsburgh
Fife, Dr. Charles A.	1534 N. Broad St., Philadelphia
Fleisher, Mrs. Alfred W.	2038 Chestnut St., Philadelphia
Fleisher, Miss Alice T.	1514 N. 17th St., Philadelphia
Fleisher, Mr. Arthur Adler	2301 Green St., Philadelphia
Fleisher, Mr. Benj. W.	2301 Green St., Philadelphia
Fleisher, Mr. Edwin A.	2301 Green St., Philadelphia
Fleisher, Mr. David T.	25th & Reed Sts., Philadelphia
	26th & Reed Sts., Philadelphia

Fleisher, Miss Helen	2220 Green St., Philadelphia
Fleisher, Mrs. H. J.	8 Asbury Ave., Oak Lane Sta., Phila
Fleisher, Mr. Henry H. J.	25th & Reed Sts., Philadelphia
Fleisher, Mr. Maurice T.	Venango & I. Sts., Philadelphia
Fleisher, Mr. Mayer	2223 Green St., Philadelphia
Fleisher, Mr. Samuel S.	26th & Reed Sts., Philadelphia
Fleisher, Mrs. Simon B.	2220 Green St., Philadelphia
Fleisher, Mrs. Walter A.	3422 Powelton Ave., West Phila.
Forbes, Mrs. Roger S.	68 E. Johnson St., Germantown
Ford, Mrs. Bruce	25 E. Summit St., Chestnut Hill
Ford, Mrs. Eleanor Jones	903 B. F. Jones Bldg., Pittsburgh
Fouchelm, Mr. Stuart F.	25th & Reed Sts., Philadelphia
Fox, Miss Rena P., R. N., Supt. Babies' Hos- pital	Philadelphia
Fraley, Dr. Frederick	314 South 17th Street, Philadelphia
Freeman, Mrs. John M.	834 Amberson St., Pittsburgh
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